The 1985 Roe Herring Charter Vessel Monitoring and Sampling Program

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ABSTRACT

Armstrong, R.W., 1985. The 1985 roe herring charter vessel monitoring and sampling program. Can. Ind. Rep. Fish. Aquat. Sci. 166: 101 p.

Eleven charter vessels made 359 sample sets on the British Columbia coast in order for fishery managers to assess the stock abundance, recruitment and state of sexual maturity of the Pacific herring (Clupea harengus pallasi). These data were used to determine the location, timing and estimated duration of the 1985 commercial roe herring fishery openings.

In addition, laboratory samples were retained after each sample set for Fisheries Research Branch scientists as part of the data base for the computer modelling system used to estimate the escapement and predict the available surplus for the 1985/1986 Pacific herring fishery. Field data, including hydroacoustic stock estimates and onboard field analysis data are contained in this report.

Key words: Pacific herring (Clupea harengus pallasi), charter vessels, stock abundance, sexual maturity, roe yield, standard length.

RÉSUMÉ

Armstrong, R.W., 1985. The 1985 roe herring charter vessel monitoring and sampling program. Can. Ind. Rep. Fish. Aquat. Sci. 166: 101 p.

Onze bateaux affrétés ont recueilli 359 séries d'échantillons sur la côte de la Colombie-Britiannique pour permettre aux gestionnaires des pêches d'évaluer l'importance des stocks, le recrutement et la maturité sexuelle du hareng du Pacifique (Clupea harengus pallasi). Ces données ont servi à déterminer l'emplacement, la date et la durée approximative des périodes d'ouverture de la pêche commerciale du hareng plein en 1984.

En outre, après le prélèvement de chaque série d'échantillons, on a conservé, à l'intention des scientifiques de la Direction de la recherche sur les pêches, des échantillons pour analyse en laboratoire qui seront intégrés à la base de données pour le système de modélisation informatisé utilisé pour évaluer le nombre de rescapés et prédire les surplus disponibles pour la pêches du hareng du Pacifique en 1985-1986. Le présent rapport renferme des données recueillies sur le terrain, notamment des estimations hydroacoustique des stocks, et des données d'analyses faites à bord.

Mots-clés: hareng du Pacifique (Clupea harengus pallasi), bateaux affrétés, importance des stocks, maturité sexuelle, production d'oeufs, longueur standard.

INTRODUCTION

In 1985, 11 herring seiners were chartered for the roe herring test fishing program to provide pre-fishery herring stock information for fishery managers and research scientists.

The charter program objectives were as follows:

1. In-season management

   a) to estimate the overall herring biomass in each fishing location and to identify a fishable stock to meet the Fixed Quota requirement,

   b) to determine roe yields,

   c) to determine if the available herring size (length and weight) was suitable for a herring fishery,

   d) to determine roe quality, ie. incidence of abnormal roe,

   e) to measure incoming year class strength and compare it with predicted returns,

   f) to ensure "on the grounds" input from Industry via the charter vessel masters,

   g) to use as training platforms for Department of Fisheries and Oceans (DFO) field staff.

2. Research

   a) to obtain biological samples for the Fisheries Research Branch (FRB) from as many herring spawning stocks as possible. The resulting information is used to forecast the stock strength and potential catch for the following year.

In order to fulfill the above objectives, it is mandatory that the fishing master be an experienced and successful herring fisherman who is ready and able to pass on his experience to the DFO staff, and who is respected by seine and gillnet fishermen participating in the commercial fishery.

HISTORICAL REVIEW OF THE ROE HERRING CHARTER PROGRAM

Successful management of roe herring fisheries depends on the manager getting timely and accurate information on stock movement, abundance and sexual maturity.

Before 1980, seine vessels were only chartered for the period preceeding fishery openings and could participate in the commercial fishery. This meant that just when the fishery managers most urgently needed the information on roe

yield and abundance, they lost one of their key sources of data. This may have resulted in lost opportunities and lost revenue to Industry.

These vessels were not chartered for the entire fishing season strictly because the cost of buying an experienced and successful fisherman out of the roe herring fishery was prohibitive, especially during the late 1970 boom years. An estimated cost of chartering 11 seine vessels was in excess of $1,000,000. The dramatic increase in value of roe herring, combined with the Industry requirement of a minimum roe yield of 10%, increased the need for timely and accurate information of stock movement, abundance and sexual maturity.

During the "Bonanza Year" of 1979, million dollar seine sets were made and cash buyers were paying up to $5,000/ton on the fishing grounds. This activity resulted in additional pressure on the resource and fishery managers, thus further confirming that test vessels were required throughout the roe fishery season.

The present chartering system is the result of consultation with fisheries staff and representatives from the Industry. It was decided that Industry would get involved in providing in-season management information through the charter vessel masters. Seiners with experienced skippers would be chartered to conduct test fishing throughout the fishing season under authority of Section 4 of the Fisheries Act and Section 3 of the Fisheries Development Act. The charter seiners would carry out the test fishing operation and would be given permission to catch a specified quantity of roe herring in tons/day for the 26-day duration of the charter. As part of the Charter Agreement, the charter seiner would not participate in the roe herring fishery during the year of the charter.

In this way, the charter program was paid out of the resource, Industry was involved during the fishing season in developing the fisheries through the charter vessel masters, and a number of seiners were bought out of the open fishery thereby reducing fleet size.

This report summarizes the seine set data, roe yield information and length frequency distribution data collected from the 11 charter seiners. In order to simplify data tabulation, interpretation and comparison with previous years, all tonnage is given in short tons (907.18 kg), the distances are shown in nautical miles (1.85 km) and herring length is given in centimeters. The present report is one of a series of publications by the DFO aimed at providing the annual summary of roe herring monitoring and sampling program.

METHODS AND MATERIALS

In 1985, 11 herring seine vessels were chartered for the roe herring fishery on the B.C. coast. Because the West Coast Vancouver Island (WCVI) area was closed to herring fishing, it was felt that two charter vessels instead of three could provide the necessary sampling effort in the area, thereby reducing the total number of charter vessels to 11 from 12 in previous years. The charter vessels were used to assess the herring stocks in each area by echo

sounding for biomass estimates and by seining for biological samples to determine recruitment and roe yield. The normal procedure was to cover hydroacoustically the fishing grounds and obtain seine samples from a cross-section of the herring schools in each location.

Invitations to tender were mailed to all licenced herring seiners, and 11 charter vessels were selected (Table 1). The selection was based on a combination of low bids (tons of roe herring per day) and a point rating system which takes into account the experience of the vessel master and the condition of the vessel and equipment. All vessels were chartered for a minimum of 26 days with provisions made for extensions of up to 5 days, if required. Bids for the successful vessels ranged between 2.69 tons/day and 3.95 tons/day for a total tonnage requirement of 1,026.22. The actual payment was 1,032.82 tons including 1.75 day extension for the charter vessel "Christav". The actual tonnage caught for payment was 1,212.705 tons. This represents an average excess catch of 16 tons per vessel or 179.8254 tons. All herring caught in excess of the tendered amount were sold at the same rate paid to the respective charter vessel and the monies forwarded to the Receiver General of Canada. The total value of the excess catch was $283,178.42; the rate paid per ton was $1,574.74/ton.

The charter timing was set to ensure that the charter vessel was available prior to and during the major spawnings in each area (Table 2). The 11 vessels were assigned to the four herring management areas as well as the closed WCVI area (Fig. 1) as follows:

Licence Area 1 - Queen Charlotte Islands - 2 vessels

Licence Area 2 - Prince Rupert - 1.5 vessels[a]

Licence Area 3 - Central Coast - 2 vessels

Licence Area 4 - Strait of Georgia - 3.5 vessels[a]

Closed Area - West Coast Vancouver Island - 2 vessels

The charter vessels were assigned to specific sampling locations within each management area and were given general directions by the fishery manager on where samples were required in each district. Each set location was recorded by Statistical Area (Fig. 2) and herring section (Figs. 3 and 4, Table 3). The onboard direction on sampling procedure was given by the DFO fishery officer, technician or biologist assigned to the vessel.

Specific sampling instructions, similar to those used in previous years, were placed onboard each vessel (Appendix Table 1).

---

[a] One charter vessel was used for both the Prince Rupert and Strait of Georgia areas (13 days duration in each area).

Table 1. Roe herring charter payment summary, B.C., 1985.

Vessel	Charter bid (tons) Daily rate	Charter (26 days)	Total payment (tons)	Total catch (tons)	Excess (tons)
Christav	3.90	101.40	108.0(1.75)[a]	108.0	0
Karonora II	3.85	100.10	100.1	111.877	+11.777
Pacific Ocean	3.80	98.80	98.8	121.1085	+22.245
Fisher Lassie II	3.95	102.70	102.7	117.54	+14.8399
Franciscan No. I	3.40	88.40	88.4	102.9285	+14.5285
Argent Fisher	3.80	98.80	98.80	120.2775	+21.48
Nita Maria	3.47	90.22	90.22	128.42	+38.2
Westview No. I	3.90	101.40	101.40	98.9675[b]	-2.4325
Sarah Margaret	3.25	84.50	84.5	109.2035	+24.7035
Pacific Harvester	3.46	89.96	89.96	116.2025	+26.2425
Elling K	2.69	69.94	69.94	78.18	+ 8.2415
Total	39.47	1,026.22	1,032.82	1,212.705	179.8254
Mean	(3.59)				

[a] Number in parenthesis indicates charter extension in days.
[b] Westview No. I shortfall paid from "Sarah Margaret" excess.

Table 2. Roe herring charter vessels by location and time period, B.C., 1985.

Vessel	Fishing master	Location	Charter timing	Charter duration (days)
Christav	G. Stava	QCI[c]	Mar. 4 - 31	27.75[a]
Karonora II	D. Smith	QCI	Mar. 1 - 26	26
Pacific Ocean	A. Sorenson	Prince Rupert	Mar. 15 - Apr. 9	26
Argent Fisher	J. Malastestinic	Prince Rupert	Mar. 20 - Apr. 1	13[b]
Fisher Lassie II	V. Wilson	Central Coast	Mar. 1 - 26	26
Franciscan No. I	J. Bragcich	Central Coast	Mar. 4 - 29	26
Argent Fisher	J. Malastestinic	SG/JS[d]	Feb. 27 - Mar. 11	13[b]
Nita Maria	R. Weber	SG/JS	Feb. 20 - Mar. 17	26
Westview No. I	M. Alecksicn	SG/JS	Feb. 20 - Mar. 17	26
Sarah Margaret	L. Dusman	SG/JS	Feb. 26 - Mar. 23	26
Pacific Harvester	A. Salo	WCVI[e]	Feb. 26 - Mar. 23	26
Elling K	F. Leland	WCVI	Feb. 26 - Mar. 23	26

[a] Includes extension of 1.75 days.
[b] The "Argent Fisher" charter split between Strait of Georgia/Johnstone Strait and Prince Rupert.
[c] Queen Charlotte Islands.
[d] Strait of Georgia - Johnstone Strait.
[e] West Coast Vancouver Island.

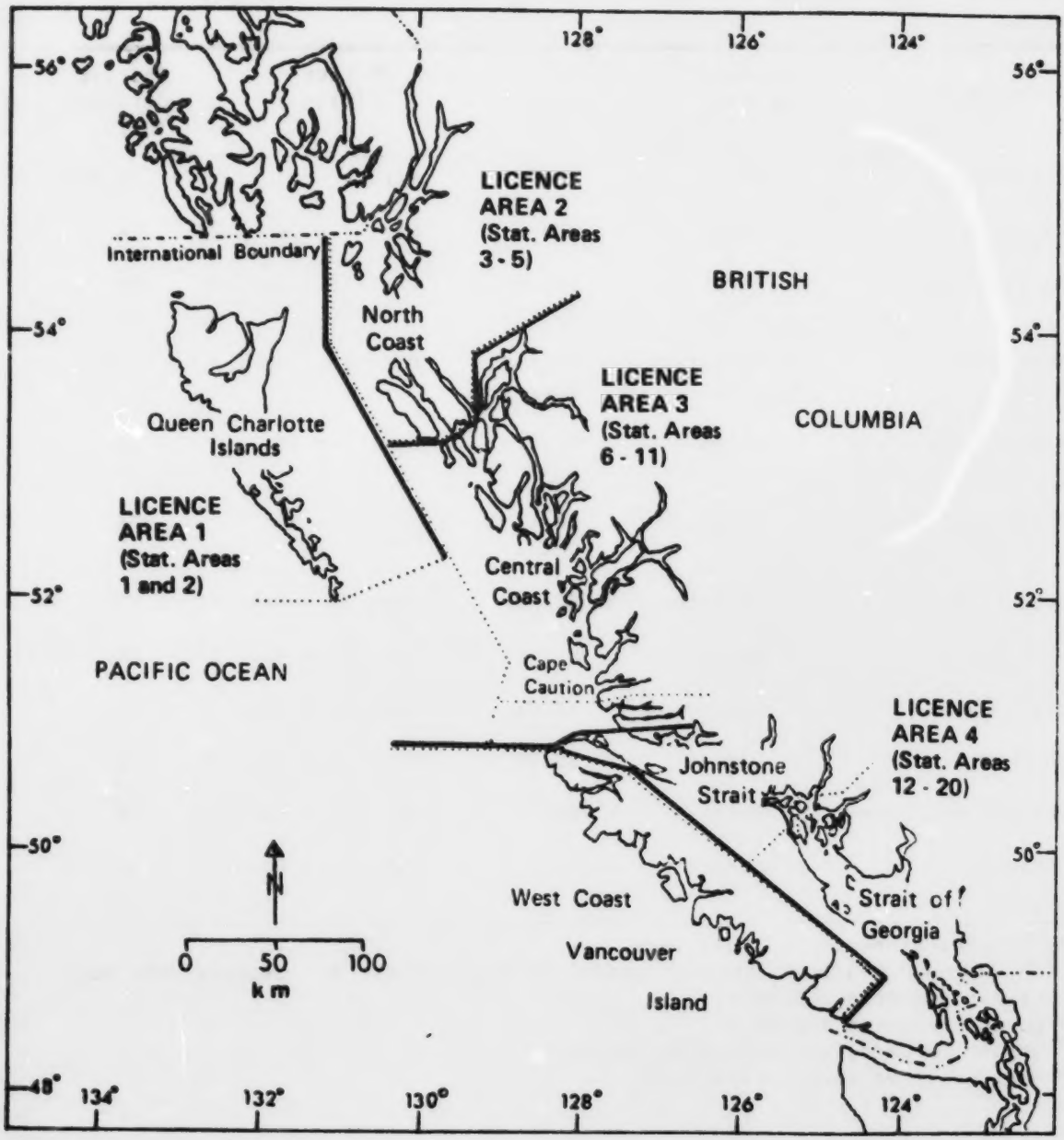


Fig. 1. Herring divisions (dotted lines) and 1985 Licence Areas 1 - 4 (solid lines).

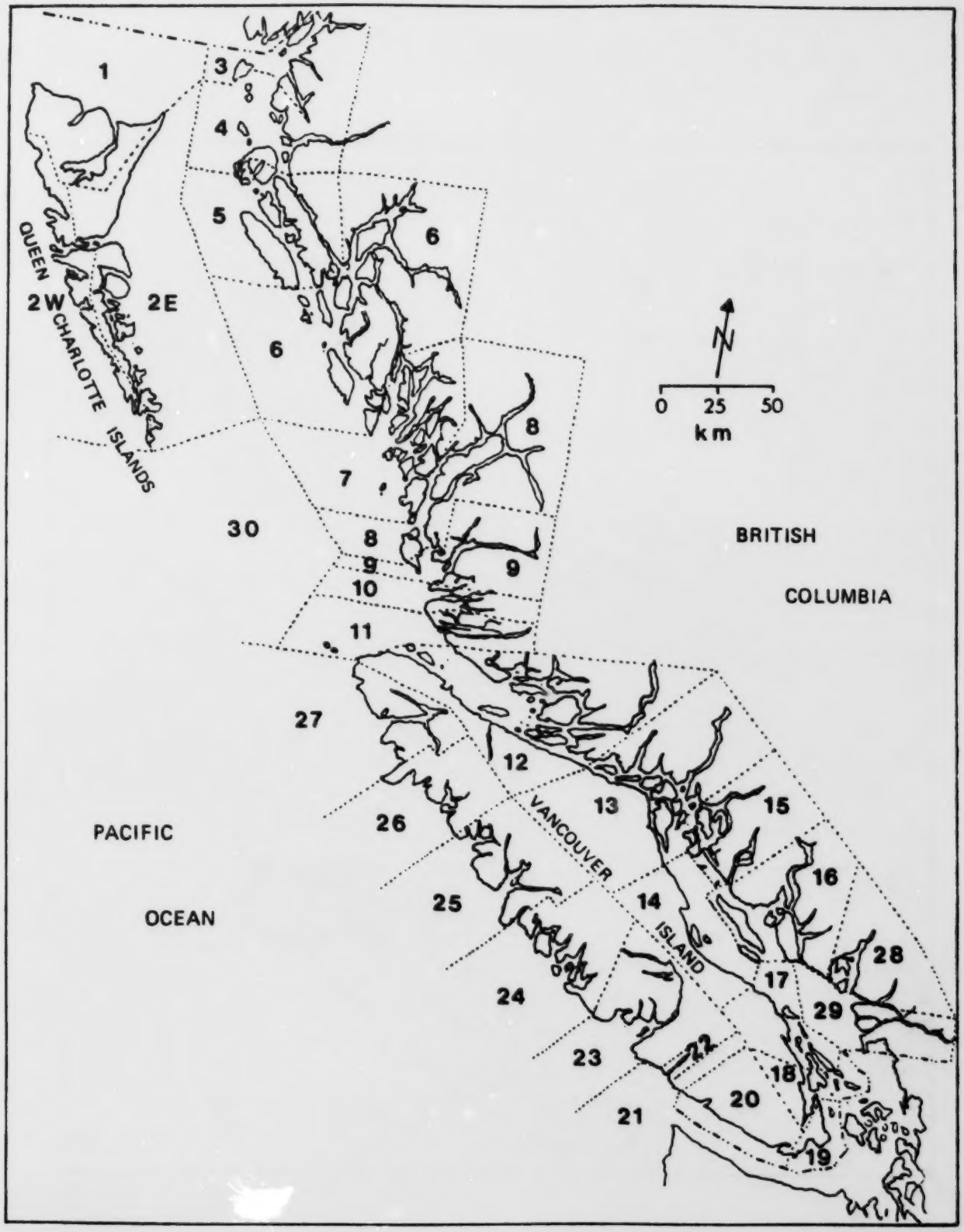


Fig. 2. Statistical Areas in British Columbia.

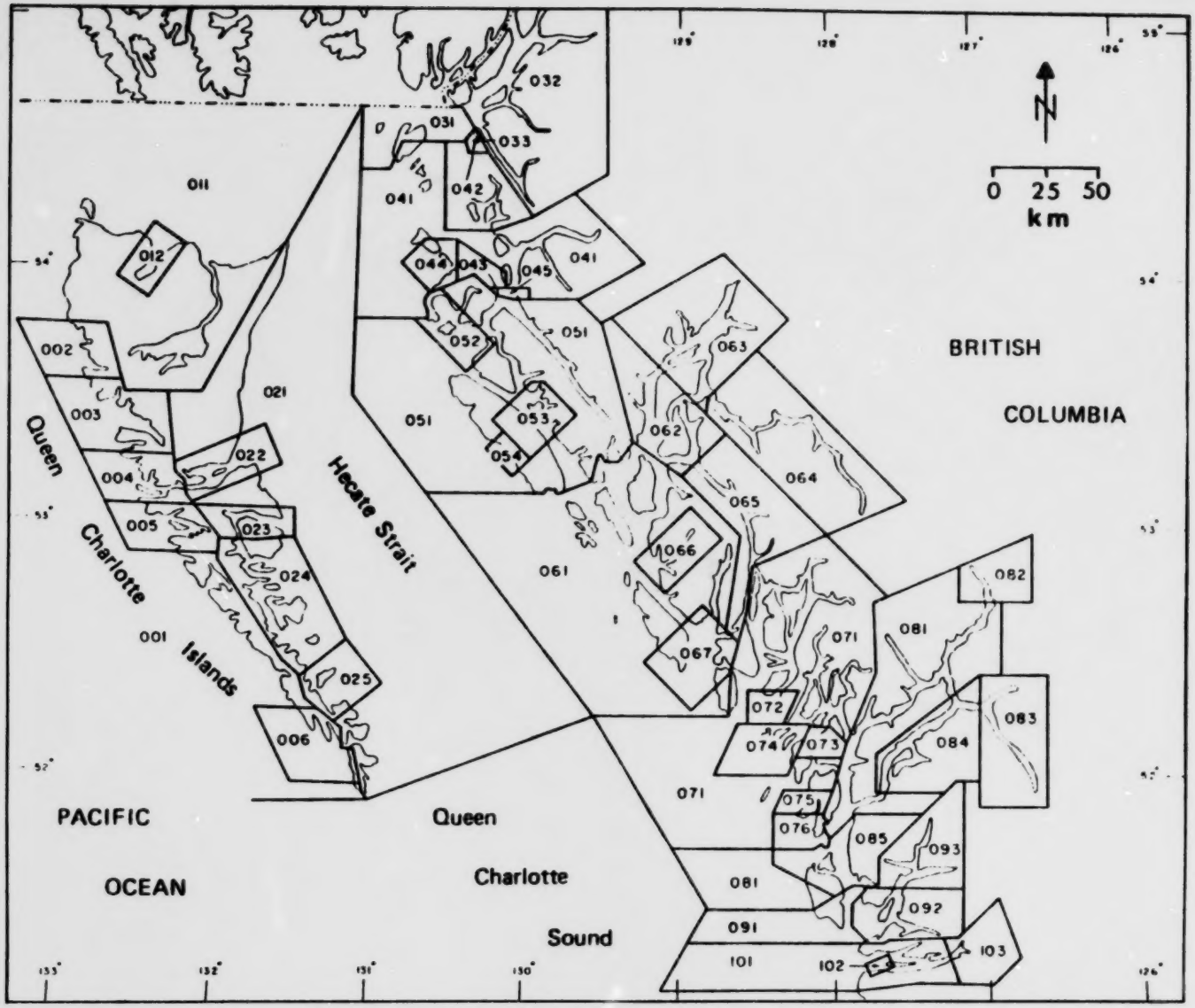


Fig. 3. Herring sections in northern British Columbia.

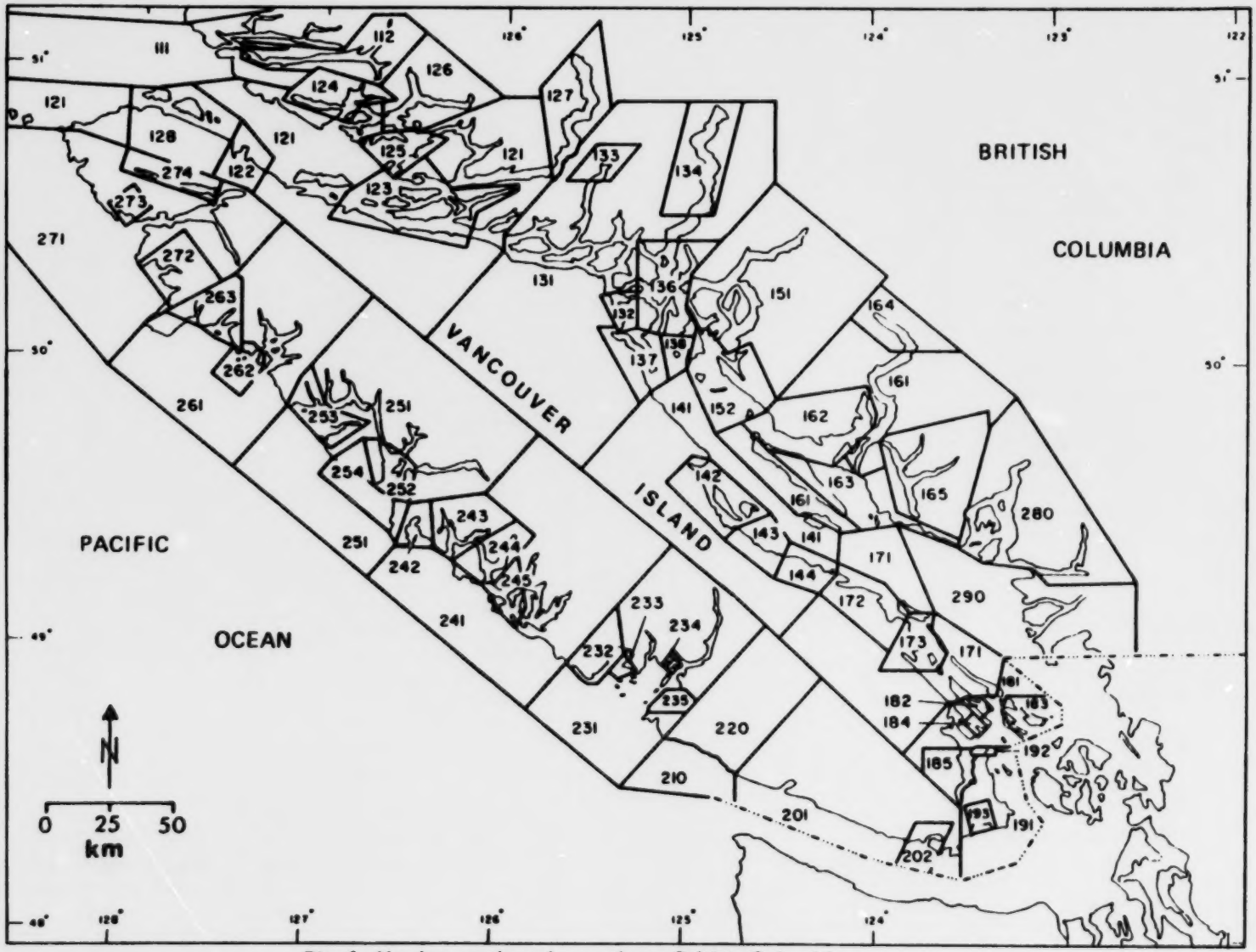


Fig. 4. Herring sections in southern British Columbia.

Table 3. Herring divisions and sections in British Columbia.

DIVISION		SECTION	DIVISION		SECTION
Name	Code	Name	Name	Code	Name
Queen Charlotte Islands	011	Other Area 1	Central (cont'd)	091	Other Area 9
	012	Naden Harbour		092	Rivers Inlet Mouth
	006	Louscoone Inlet		093	Rivers Inlet Head
	001	Other Area 2W		101	Other Area 10
	002	Port Louis		102	Takush Harbour
	003	Rennell Sound		103	Smith Inlet Head
	004	Cartwright Sound		061	Other Area 6
	005	Englefield Bay		062	Promise Island
	023	Cumshewa Inlet		063	Kitimat Arm
	025	Skincuttle Inlet		064	Gardner Canal
	021	Other Area 2E		065	Princess Royal Channel
	022	Skidegate Inlet		066	Surf Inlet
	024	Laskeek Bay		071	Other Area 7
North Coast	033	Port Simpson		081	Other Area 8
	042	Big Bay		082	Kimsquit Bay
	043	Malacca Passage		083	Bentinck Arms
	044	Edye Passage	Johnstone Strait	123	Cracroft Island
	045	Gibson Group		124	Watson Island
	052	Kitkatla Channel		125	Eden Island
	031	Other Area 3		126	Kingcome Inlet
	032	Portland Inlet		127	Knight Inlet
	041	Other Area 4		111	Other Area 11
	051	Other Area 5		112	Nugent Sound
	053	Anger Island		121	Other Area 12
	054	Poul Bay		122	Beaver Harbour
Central	067	Kitasu Bay		128	Goletas Channel
	072	Powell Anchorage		131	Other Area 13 Strait
	073	Gunboat Passage		132	Kanish Bay
	074	Thompson Bay		133	Loughborough Inlet
	075	McNaughton Group		134	Bute Inlet
	076	Kildidt Sound			
	085	Kwakshua Channel			
	084	Burke Channel			

Table 3. (cont'd) Herring divisions and sections in British Columbia.

DIVISION		SECTION	DIVISION		SECTION
Name	Code	Name	Name	Code	Name
Strait of Georgia	152	Lund	West Coast of	232	Macoah Pass
	162	Stillwater	Vancouver Island	233	Mayne Bay
	142	Baynes Sound		210	Area 21
	143	Qualicum		218	Offshore Area 21
	144	French Creek		220	Nitinat Lake
	172	Nanoose Bay		231	Other Area 23
	173	Yellow Point		234	Useless Inlet
	182	Ganges Harbour		235	Bamfield Inlet
	183	Plumper Sound		238	Offshore Area 23
	290	Boundary Bay		244	Whitepine Cove
	136	Other Area 13 Gulf		245	Meares Island
	137	Heriot Bay		241	Other Area 24
	138	Marina Island		242	Hesquiat Harbour
	141	Other Area 14		243	Sydney Inlet
	151	Other Area 15		248	Offshore Area 24
	161	Other Area 16		252	West Nootka
	163	Pender Harbour		254	Bajo Point
	164	Queens Reach		253	Nuchatlitz Inlet
	165	Sechelt Inlet		272	Brooks Bay
	171	Other Area 17		273	Winter Harbour
	181	Other Area 18		251	Other Area 25
	184	Fulford Harbour		261	Other Area 26
	185	Saanich Inlet		262	Clanninick Cove
	191	Other Area 19		263	Checleset Bay
	192	Tsehum Harbour		271	Other Area 27
	193	Victoria Harbour		274	Holberg Inlet
	201	Other Area 20			
	202	Sooke Inlet			
	280	Howe Sound			

Onboard Sampling Procedure

Seine sample sets were made on all large bodies of herring, and samples of about 90 kg (200 lb) were brought aboard from the set using a small meshed dipnet or brailer. A Wheelhouse and Sample Log sheet, which doubles as a length measurement data sheet, was completed after every set (Appendix Figs. 1a & b). Another random sample of approximately 18 kg (40 lb) was taken from the same set for further laboratory analysis at FRB. Samples were also retained for special FRB research studies in selected locations along the coast.

The onboard data sheets and sampling procedures are described below.

1. Onboard data records

i) Daily log

The daily log covers all activities of the charter vessel while assessing the herring stocks. This includes a summary of discussions with the vessel master on fish movement and behaviour patterns. The daily logs from the previous year are also placed aboard the charter vessels as a reference for past fish behavior and distribution patterns in a particular location.

ii) Wheelhouse and Sample Log

This data sheet is completed after every set, including water hauls, and provides a record of the seine set including biomass estimates and roe yield information (Appendix Figs. 1a and 1b). Information from this data sheet is reported to the District Management Coordinator by radio telephone. The Wheelhouse and Sample Log was revised to include more information in 1985.

iii) Onboard sampling

a) Herring measurement

Standard length measurements (Appendix Fig. 2) obtained from a random sample of 100 herring are recorded directly on a Wheelhouse and Sample Log (Appendix Figs. 1a and 1b). The herring below a "cutoff" length (predetermined from past year's age/length data) are judged to be recruiting herring (Appendix Table 2). These small herring are less desireable due to their smaller gonads and therefore lower roe yield. In addition, changes in the percentage of herring below the "cutoff" length could indicate a change in stock composition and may be important in setting fishery boundaries.

2. Roe yield

During the 1985 roe herring fishery, two methods of determining roe yield were used:

a) Volumetric method - this is the commonly used method which consists of filling a standard 18 l (4 imp. gal.) bucket level to the top with herring, stripping the ripe female roe into a calibrated volumetric cylinder and recording the percentage off the scale (Appendix Table 3).

b) Weight method - this was used in the Strait of Georgia - the actual weight of the herring sample and roe is used to calculate the roe yield (Appendix Table 4).

In this report, the roe yield information tables give volume and adjusted volume or weight and adjusted weight depending on the area sampled. The adjusted roe yield values assume a 50:50 male/female sex ratio and the formula used for this adjustment is shown in Appendix Table 5. Generally, the herring population will have a 50:50 male/female sex ratio. However, this may not be true in all cases. For example, if the stocks are in a declining phase, two-year-old males may recruit to the spawning stock, rendering males the dominant sex; males breaking off from the main school just prior to spawning could be another factor affecting the overall sex ratio. Therefore, a 50:50 male/female sex ratio should be assumed with caution.

3. Laboratory samples

After each set, a biological sample containing a minimum of 100 herring was placed in a plastic bucket, sealed and either frozen or iced down for delivery to FRB for further analysis. During 1985, additional FRB samples were retained from preselected locations along the coast for determining herring fecundity and the Gonosomatic Index (GSI) used in predicting the rate of herring maturation.

RESULTS

During the 1985 roe herring charter program, the 11 charter seiners made 359 seine sample sets for an average of 33 sets per vessel (Table 4). A total of 736 roe tests were carried out onboard the charter vessels and 259 samples were retained for the FRB laboratory (Table 4). Approximately 100 samples were also retained for special research studies, i.e. Gonosomatic Index and fecundity studies. In 1985, the roe yields for both the seine and gillnet fisheries were generally very good, ranging between 10-13% for seines and 11-15% for gillnets (Table 5). The exception was the Strait of Georgia where the seine catch may have been below the 9% roe yield. Hydroacoustic biomass estimates, roe yield information, sea surface water temperatures and length frequency distributions of herring are shown for each seine sample set in Tables 6-29. The sampling frequency and distribution among areas in 1985 were generally acceptable within the 26-day charter period but the later spawnings in the northern areas were not sampled. On the WCVI where the charters were reduced from three to two vessels, no samples were obtained in 1985 from Statistical Areas 26 and 27 because spawnings occurred simultaneously with those in Areas 23, 24 and 25.

For 1986, more split charters similar to the 1985 "Argent Fisher" Strait of Georgia/Prince Rupert charter will be considered to sample late spawnings, and a third charter vessel will be considered for the WCVI area regardless of whether there is a fishery or not.

Table 4. Number of seine sets and roe tests by charter vessel, B.C., 1985.

Statistical Area	Charter vessel	No. of sets	No. of roe tests	No. of biological samples retained[a]
2E	Christav	41	90	28
2W	Karonora II	15	45	12
3-5	Pacific Ocean	30	47	18
3-5/Split	Argent Fisher	22	47	16
Central Coast	Fisher Lassie II	37	80	29
Central Coast	Franciscan No. I	19	62	18
Strait of Georgia	Westview No. I	55	95	38
Strait of Georgia	Nita Maria	37	64	25
Strait of Georgia	Sarah Margaret	28	63	23
Strait of Georgia/Split	Argent Fisher	22	52	15
23 & 24	Pacific Harvester	32	46	20
25 - 27	Elling K.	21	45	17
	Total	359	736	259
	Average	33	67	24
	Range	15-55	45-90	21-38

[a] In addition to the biological samples, 100 samples were retained for special research studies.

Table 5. Roe herring openings, B.C., 1985.

Licence Area	Location (sub-area)	Date/Time (duration)	Hailed catch (tons)	Est. roe yield %
		SEINES		
1. (Queen Charlotte Islands)	Skincuttle Inlet (2-15)	March 11/1213-1802 (5 hrs 49 min)	4,825	12-16
2. (Prince Rupert)	Kitkatla Inlet (5-4, 5-5, 5-8)	March 28/1050-1332 (2 hrs 42 min)	3,007	10-13
3. (Central Coast)	Spiller Chan./ Neekas Inlet (7-14)	March 11/1310-1807 (4 hrs 57 min)	3,045	11+
4. (Strait of Georgia)	Lambert Chan. (14-9, 14-10)	March 6/1615-2025 (4 hrs 10 min)	2,879	6-11
		Total Seine Catch	13,756	
		GILLNETS		
1. (Queen Charlotte Islands)	Huston Inlet (2-16)	March 25-26/2330-1315 (13 hrs 45 min)	1,558	12-14
2. (Prince Rupert)	Pearl Harbour (4-5, 4-6, 4-8, 4-14)	March 26-28/1400-1200 (46 hrs)	3,813	13-15
3. (Central Coast)	Kitasu Bay (6-18)	March 31/1030-1800 (7 hrs 30 min)	897	12-15
	Weeteeam Bay (6-13)			
	Powell Anch. (7-9)	April 1/0900-1800 (9 hrs)	1,365	12-15
	Dundavin Inlet (7-22)	Total for Central Coast	2,262	
	Little Thompson Bay (7-21)			
	Spiller Chan. (7-13)			
	Kwakshua Chan. (8-2)			
4. Strait of Georgia	Lambert Chan. (14-7, 14-10)	March 8/0900-1700 (8 hrs)	1,820	11-12
		March 9/0900-1300 (4 hrs)	1,866	11-12
		Total for Strait of Georgia	3,686	
		Total Gillnet Catch	11,319	

Table 6. Seine set data and roe yield information. ROE HERRING CHARTER SEINER "KARONORA II", STAT. AREA 2W, 1985.

Section (Area)	Set No.	Location	D/M/Y	Time	Dep. (fa)	Tonnage In loc.	Tonnage Set on	Tonnage Est. catch	Temp (°C)	Test No.	Sex Ratio M No.	Sex Ratio M %	Sex Ratio F No.	Sex Ratio F %	Roe Yield % Vol.	Roe Yield % Adj. vol.	Roe Grade (Pcs) #1	Roe Grade (Pcs) #2	Roe Grade (Pcs) #3	Spnd. out	Juv. or immat.
002 (2W)	1	Port Louis	03/03/85	0908	20	1000	250	250	6.2	1	26	46	30	54	10.5	9.7	26	24	26		
										2	26	47	29	53	10.0	9.4	1	2	7		
										3	23	38	37	62	11.0	8.9	3	3	4		
002 (2W)	2	Kiokathli Inlet	03/03/85	1503	10	1400	100	100	6.2	1	25	46	29	54	9.0	8.3	21	5	3		
										2	28	51	27	49	12.0	12.2	23	2	2		
										3	29	53	26	47	10.0	10.6	21	2	3		
										4	30	52	28	48	10.0	10.4	21	2	5		
002 (2W)	3	Port Louis, N. End of Queen I.	04/03/85	0819			100		6.2		Water haul										
002 (2W)	4	Port Louis, N. of Queen I.	04/03/85	0909		1400	80	80	6.7	1	21	39	33	61	12.0	9.8	26	1	6		
										2	30	53	27	47	10.0	10.6	22	1	4		
										3	34	55	28	45	10.0	11.1	21	1	6		
002 (2W)	5[a]	Port Louis, N. of Pip Islets	04/03/85	1748	11	1400	75	75	6.7	1	29	52	27	48	9.0	9.4	19	4	4		
										2	21	38	35	62	13.0	10.5	28	2	5		
										3	26	44	33	56	13.0	11.6	26	4	3		
										4	24	44	31	56	12.0	10.7	25	2	4		
										5	19	35	36	65	12.0	9.2	26	3	7		
										6	18	35	34	65	13.0	10.0	27	2	5		
										7	15	28	38	72	14.5	10.1	33	3	2		
										8	22	36	39	64	14.5	11.3	33	0	6		
002 (2W)	6	Port Louis, 1/4 mi E. Turner Pt.	05/03/85	0946		1400	100	15		1	25	45	31	55	11.0	10.0	26	2	3		
										2	23	42	32	58	12.0	10.3	25	1	6		
										3	31	50	31	50	12.0	12.0	26	1	4		
002 (2W)	7[a]	Port Louis, 1/2 mi N.E. Queen I.	05/03/85	1128	16	1400	300	100		1	24	43	32	57	14.0	12.3	30	1	1		
										2	22	39	34	61	14.5	11.9	32	1	1		
										3	34	57	26	43	9.0	10.5	21	1	4		
										4	19	34	37	66	14.5	11.0	32	2	3		

Table 6 (cont'd). Seine set data and roe yield information. ROE HERRING CHARTER SEINER "KARONORA II", STAT. AREA 2W, 1985.

Section (Area)	Set No.	Location	D/M/Y	Time	Dep. (fa)	Tonnage In loc.	Tonnage Set on	Tonnage Est. catch	Temp (°C)	Test No.	Sex Ratio M No.	Sex Ratio M %	Sex Ratio F No.	Sex Ratio F %	Roe Yield % Vol.	Roe Yield % Adj. vol.	Roe Grade (Pcs) #1	Roe Grade (Pcs) #2	Roe Grade (Pcs) #3	Spnd. out	Juv. or immat.
002 (2W)	7	Port Louis, 1/2 mi N.E. Queen I. (cont'd) Charter payment herring								5	30	49	31	51	12.5	12.3	29	1	2		
										6	34	56	27	44	11.0	12.5	25	1	1		
										7	38	61	24	39	10.5	13.5	22	0	2		
002 (2W)	8	Port Chanal, 1/2 mi E. Celestial Bluff	06/03/85	1427		500	300	300		1	33	56	26	44	2.0	2.3	5	1	20		
										2	28	48	30	52	3.0	2.9	7	6	17		
										3	27	47	31	53	1.5	1.4	5	9	17		
002 (2W)	9	Port Louis, Inside Turner Pt.	07/03/85	1650		1200	100	100		1	34	58	25	42	10.0	11.9	22	0	3		
										2	32	54	27	46	12.0	13.0	26	0	1		
										3	26	45	32	55	15.0	13.6	32	0	0		
										4	36	57	27	43	11.0	12.8	23	1	3		
003 (2W)	10	Rennell Sd., 1 mi W. Richardson Head	08/03/85	1356		350	200	100		1	26	43	35	57	0	-	1	1	33		
002 (2W)	11	Port Louis, 1/3 mi E. of Queen I.	11/03/85	1820	16		150	50		Water haul											
002 (2W)	12	Port Louis, 1/4 mi E. Turner Pt.	11/03/85	1820		800	200	200	6.8	1	27	44	35	56	14.5	12.9	33	0	2		1
										2	37	57	28	43	12.5	14.5	26	0	2		
										3	35	56	27	44	9.5	10.8	25	0	2		
005 (2W)	13	Inskip Channel	20/03/85	0845			100	60 / 70	6.2	1	37	50	37	50	10.0	10.0	32	1	4		1
										2	41	55	34	45	8.5	9.4	25	5	4		
										3	38	53	34	47	9.0	9.6	24	3	7		
003 (2W)	14	Head of Seal Inlet	22/03/85	1620						Water haul											
003 (2W)	15	Rennell Sd., N. Side of Shields I.	23/03/85	1100	40		25	25	6.4	1	25	41	36	59	14.3	12.1	34	0	2		
										2	38	52	35	48	13	13.5	33	0	2		
										3	36	55	29	45	12	13.3	27	0	2		

[a] Charter payment herring.

Table 7. Length frequency distribution of herring. ROE HERRING CHARTER SEINER "KARONORA II", STAT. AREA 2W, 1985.

Section (Area)	Set No.	Location	D/M/Y	Time	Biol. sample No.	Length Frequency (cm) 12-13	13-14	14-15	15-16	16-17	17-18	18-19	19-20	20-21	21-22	22-23	23-24	24-25	25-26	26-27	27-28	Sample size	Average length (cm)	Cutoff (cm)	% Below cutoff
002 (2W)	1	Port Louis	03/03/85	0908	1											3	12	43	34	8		100	24.8		
002 (2W)	2	Klokathli Inlet	03/03/85	1503	2								1		1		11	31	47	8		99	24.9	18.5	0
002 (2W)	3	Port Louis, N. End of Queen I.	04/03/85	0819				Water haul																	
002 (2W)	4	Port Louis, N. of Queen I.	04/03/85	0909	3											3	9	45	38	5		100	24.8	18.5	0
002 (2W)	5	Port Louis, N. of Pip Islets	04/03/85	1748	4											6	13	27	44	8	2	100	24.9	18.5	0
002 (2W)	6	Port Louis, 1/4 mi E. Turner Pt.	05/03/85	0946	5										3	5	4	44	36	8		100	24.8	20.0	0
002 (2W)	7	Port Louis, 1/2 mi N.E. Queen I.	05/03/85	1128	6										3	3	5	41	40	9		101	24.9	20.0	0
002 (2W)	8	Port Chanal, 1/2 mi E. Celestial Bluff	06/03/85	1427	7								1		2	5	18	39	30	5		100	24.5	20.0	1
002 (2W)	9	Port Louis, inside Turner Pt.	07/03/85	1650	8									1	2	1	9	29	41	7		90	24.9	20.0	0
003 (2W)	10	Rennell Sd., 1 mi W. Richardson Head	08/03/85	1356	9							1	2		2	6	20	35	33	5		104	24.4	20.0	3
002 (2W)	11	Port Louis, 1/3 mi E. of Queen I.	11/03/85	1820				Water haul																	
002 (2W)	12	Port Louis, 1/4 mi E. Turner Pt.	11/03/85	1850	10										1		4	40	45	11	1	103	24.9	20.0	0
005 (2W)	13	Inskip Channel	20/03/85	0845	11							1		8	8	3	22	34	21	3		100	23.9	20.0	1
003 (2W)	14	Head of Seal Inlet	22/03/85	1620				Water haul																	
003 (2W)	15	Rennell Sd., N. Side Shields I.	23/03/85	1100	12										1	6	8	32	48	7	1	103	24.9	20.0	0

Table 8. Seine set data and roe yield information. ROE HERRING CHARTER SEINER "CHRISTAV", STAT. AREA 2E, 1985.

Section (Area)	Set No.	Location	D/M/Y	Time	Dep. (fa)	Tonnage In loc.	Tonnage Set on	Tonnage Est. catch	Temp (°C)	Test No.	Sex Ratio M No.	Sex Ratio M %	Sex Ratio F No.	Sex Ratio F %	Roe Yield % Vol.	Roe Yield % Adj. vol.	Roe Grade (Pcs) #1	Roe Grade (Pcs) #2	Roe Grade (Pcs) #3	Spnd. out	Juv. or immat.
024 (2E)	1	1/2 mi S. of Werner Pt.	04/03/85	1705	65		200	0	7.2		Water haul										
025 (2E)	2	W. Side of Huxley I.	04/03/85	1800	35/50				7.3		Water haul										
025 (2E)	3	W. of Huxley I.	04/03/85	1930	55			15	7.2	1	60	54	51	46	0	-	0	0	51		
										2	42	37	71	63	0	-	0	0	71		
024 (2E)	4	All Alone Stone	05/03/85	0830		~ 1000		2 / 400	7.2	1	47	50	47	50	0	-	1	1	45		
										2	52	55	43	45	0	-	0	3	40		
025 (2E)	5	W. Side of Bush Rock	05/03/85	1320	30		200	125	7.0	1	45	56	36	44	9.8	11.1	31	3	2		
										2	35	44	45	56	10.0	8.9	37	5	3		
										3	42	52	39	48	9.5	9.9	36	1	2		
025 (2E)	6	S. of Slug Islet	05/03/85	1955	30/50			20	7.3	1	36	47	41	53	10.0	9.4	31	4	6		
										2	39	52	36	48	10.0	10.4	30	2	4		
										3	40	54	34	46	11.0	12.0	29	0	5		
024 (2E)	7	1/2 mi W. of Ustes Pt.	06/03/85	1250	15/65		75	10 / 15	7.2	1	38	39	59	61	0	-	0	0	59		
										2	38	38	62	62	0	-	0	0	62		
025 (2E)	8	Newberry Pt.	07/03/85	930	65		1000		7.2		Water haul										
025 (2E)	9	Off Jedway on Edge	07/03/85	1935	30		200	100	7.2	1	36	45	44	55	12.5	11.4	36	1	7		
										2	32	40	49	60	12.5	10.4	38	6	5		
										3	49	56	39	44	8.5	9.7	27	2	10		
										4	39	50	39	50	10.0	10.0	28	1	10		

Table 8 (cont'd). Seine set data and roe yield information. ROE HERRING CHARTER SEINER "CHRISTAV", STAT. AREA 2E, 1985.

Section (Area)	Set No.	Location	D/M/Y	Time	Dep. (fa)	Tonnage			Temp (°C)	Test No.	Sex Ratio				Roe Yield %		Roe Grade (Pcs)			Spnd. out	Juv. or immat.
						In loc.	Set on	Est. catch			M		F		Vol.	Adj. vol.	#1	#2	#3		
											No.	%	No.	%							
024 (2E)	10	Juan Perez	08/03/85	1235	45	4000	150	20	7.3	1	37	40	55	60	0	-	1	0	54		
										2	24	28	61	72	0	-	3	1	57		
025 (2E)	11	W. Side of Huxley I.	08/03/85	1650	45		200	0	7.3		Water haul										
025 (2E)	12	1/2 mi S. of Newberry Pt.	08/03/85	1735	65	5000	500	100	7.1	1	43	47	49	53	0.5	0.5	3	7	39		
										2	44	48	47	52	2.0	1.9	10	2	35		
										3	48	51	46	49	0.5	0.5	4	5	37		
025 (2E)	13	Skincuttle Inlet	08/03/85	2055	20/50	4000		100	7.3	1	33	40	50	60	4.0	3.3	17	5	28		
										2	43	49	45	51	5.5	5.4	19	8	18		
										3	36	44	45	56	5.5	4.9	18	4	23		
025 (2E)	14	Huston Inlet	09/03/85	0745	40			0	7.0		Water haul										
025 (2E)	15	Huston Inlet	09/03/85	0835	40		500	150/200	7.0	1	39	53	34	47	10.0	10.6	26	2	6		
										2	33	49	35	51	11.0	10.8	32	2	1		
										3	37	50	37	50	9.0	9.0	26	2	9		
025 (2E)	16	Elswa Rock	09/03/85	1600	35		100	25/50	7.4	1	47	52	44	48	9.5	9.9	36	2	6		
										2	45	56	36	44	9.0	10.2	30	2	4		
										3	49	57	37	43	9.5	11.0	31	2	4		
025 (2E)	17	Huston Inlet	10/03/85	0730	20	3500	30/400	100	6.5	1	48	60	32	40	8.75	10.9	29	2	1		
										2	51	59	36	41	11.0	13.4	34	2	0		
										3	41	53	36	47	9.75	10.4	29	5	2		
										4	43	52	40	48	12.5	13.0	36	2	2		
										5	29	50	29	50	11.5	11.5	25	2	2		

Table 8 (cont'd). Seine set data and roe yield information. ROE HERRING CHARTER SEINER "CHRISTAV", STAT. AREA 2E, 1985.

Section (Area)	Set No.	Location	D/M/Y	Time	Dep. (fa)	Tonnage: In loc.	Tonnage: Set on	Tonnage: Est. catch	Temp (°C)	Test No.	Sex Ratio: M No.	Sex Ratio: M %	Sex Ratio: F No.	Sex Ratio: F %	Roe Yield %: Vol.	Roe Yield %: Adj. vol.	Roe Grade (Pcs): #1	#2	#3	Spnd. out	Juv. or immat.
025 (2E)	18	Off Harriet Harbour	10/03/85	1440	40		1000	~ 30	7.5	1	39	51	38	49	13.5	13.8	34	2	2		
										2	33	43	44	57	15.0	13.2	41	1	2		
										3	24	34	47	66	14.5	11.0	38	3	6		
										4	36	45	44	55	14.5	13.2	40	1	3		
025 (2E)	19	Huston Inlet	10/03/85	1920	20		300	50 / 100	7.4	1	47	57	36	43	9.9	11.5	33	2	1		
										2	41	53	37	47	12.0	12.8	34	1	2		
										3	38	45	46	55	12.3	11.2	40	5	1		
										4	45	52	42	48	13.0	13.5	39	2	1		
025 (2E)	20	Bush Beak Rks.	11/03/85	0726	30		200	100	7.3	1	38	48	41	52	11.0	10.6	32	4	5		
										2	40	54	34	46	12.0	13.0	32	0	2		
										3	28	34	54	66	14.5	11.0	48	3	3		
										4	42	51	41	49	11.5	11.7	34	3	4		
										5	32	40	49	60	14.0	11.7	41	2	6		
025 (2E)	21	Huston Inlet	11/03/85	0915	28 / 30		200		7.2	1	40	53	36	47	11.5	12.2	33	2	1		
										2	35	48	38	52	14.0	13.5	36	2	0		
										3	39	51	37	49	13.0	13.3	36	0	1		
025 (2E)	22	Between Huxley & Park I.	12/03/85	1800	40 / 50	2 / 3000	150	50 / 80	7.4	1	50	49	53	51	6.0	5.9	24	8	21		
										2	52	50	53	50	5.5	5.5	20	10	23		
024 (2E)	23	1/2 mi E. of Ustas Pt.	14/03/85	0610	60 / 65				7.2	1	78	59	54	41	0.5	0.6	4	3	47		11
										2	77	57	58	43	0.5	0.6	4	5	49		14
025 (2E)	24	Park I.	15/03/85	1415	50 / 60		200		7.0		Water haul										
025 (2E)	25	1/2 mi S. of Newberry Pt.	15/03/85	1910	20 / 55		3 / 400	1	7.4		Water haul										

Table 8 (cont'd). Seine set data and roe yield information. ROE HERRING CHARTER SEINER "CHRISTAV", STAT. AREA 2E, 1985.

Section (Area)	Set No.	Location	D/M/Y	Time	Dep. (fa)	Tonnage			Temp (°C)	Test No.	Sex Ratio				Roe Yield %		Roe Grade (Pcs)			Spnd. out	Juv. or immat.
						In loc.	Set on	Est. catch			M		F		Vol.	Adj. vol.	#1	#2	#3		
											No.	%	No.	%							
025 (2E)	26	1/2 mi S. of Newberry Pt.	15/03/85	2020	65			20/50	7.4	1	47	42	65	58	10.5	9.1	44	6	15		
										2	53	49	55	51	9.0	8.8	42	2	11		
										3	38	36	69	64	10.0	7.8	45	7	17	2	
025 (2E)	27	Head of Huston Inlet	16/03/85	1025	16		2/300	40/60	7.4	1	44	52	41	48	12.0	12.5	39	0	2		
										2	46	55	38	45	11.5	12.8	37	0	1		
										3	41	47	47	53	14.0	13.2	45	0	2		
024 (2E)	28	Werner Pt.	17/03/85	2045	35/45				7.4	1	56	50	56	50	8.5	8.5	43	3	10		
025 (2E)	29	Newberry Pt.	17/03/85	2135	20/40	1/300		5	7.4	1	68	58	50	42	7.5	8.9	37	2	11		1
										2	52	45	63	55	8.5	7.7	42	1	20		
025 (2E)	30	Blue Jay Cove	18/03/85	1310	45		250	0	7.4		Water haul										
025 (2E)	31	Sea Pigeon I.	19/03/85	0915	30/35	150/200	150/200		7.2	1	42	51	41	49	12.0	12.2	41	0	0		
										2	52	63	30	37	9.5	12.8	30	0	0		
										3	36	41	51	59	14.5	12.3	49	0	2		
024 (2E)	32	Haswell I.	21/03/85	0850	35/60	100		30	7.2		Water haul										
024 (2E)	33	Sedgewick Bay	22/03/85	0505	40/45		400	150	7.2	1	59	57	45	43	9.5	11.0	42	1	2		
										2	58	54	50	46	10.0	10.9	44	2	4		
										3	58	56	46	44	9.0	10.2	40	3	3		
024 (2E)	34[a]	Sedgewick Bay	23/03/85	2020				200	7.3	1	46	48	49	52	11.5	11.1	45	1	3		
										2	42	43	56	57	12.5	11.0	51	2	3		
										3	53	51	51	49	11.5	11.7	49	1	1		
										4	50	45	62	55	11.5	10.5	55	4	3		
										5	69	61	45	39	9.0	11.5	43	0	2		

Table 8 (cont'd). Seine set data and roe yield information. ROE HERRING CHARTER SEINER "CHRISTAV", STAT. AREA 2E, 1985.

Section (Area)	Set No.	Location	D/M/Y	Time	Dep. (fa)	Tonnage: In loc.	Tonnage: Set on	Tonnage: Est. catch	Temp (°C)	Test No.	Sex Ratio: M No.	Sex Ratio: M %	Sex Ratio: F No.	Sex Ratio: F %	Roe Yield %: Vol.	Roe Yield %: Adj. vol.	Roe Grade (Pcs): #1	#2	#3	Spnd. out	Juv. or immat.
024 (2E)	35	Sedgewick Bay	24/03/85	1715	60	10			7.4		Water haul										
024 (2E)	36	Sedgewick Bay	24/03/85	1955	40/55			200	7.4	1	51	53	46	47	12.5	13.3	45	1	0		
										2	47	51	46	49	12.5	12.8	46	0	0		
										3	51	52	48	48	10.5	10.9	43	0	5		2
024 (2E)	37	Atli Inlet	28/03/85	830	35/40	500	350	250	7.3	1	55	48	60	52	10.0	9.6	55	2	3		
										2	68	55	55	45	9.0	10.0	48	1	6		
										3	58	49	61	51	10.5	10.3	56	2	3		
024 (2E)	38	Selwyn Inlet	28/03/85	2130		1000/1500		200		1	58	57	44	43	8.5	9.9	42	2	0		
										2	50	49	53	51	10.0	9.8	49	2	2		
										3	54	51	52	49	12.0	12.2	50	1	1		
023 (2E)	39	Cumshewa Inlet									Water haul										
023 (2E)	40	Cumshewa Inlet									Water haul										
024 (2E)	41	Selwyn Inlet	30/03/85	2015		1/1500	500	300	7.2	1	44	42	60	58	14.0	12.1	57	2	1		
										2	48	44	62	56	11.7	10.4	61	1	0		
										3	52	46	60	54	11.5	10.6	56	1	3		
025 (2E)		1/2 mi N. of Park I.	17/03/85	1230		Herring ball sample				1	61	58	44	42	10.0	11.9	39	3	2		
										2	43	43	57	57	14.0	12.3	50	3	4		
										3	51	51	49	49	12.0	12.2	45	3	1		

* Charter payment herring for Westview No. 1, Sara Margaret and Nita Maria.

Table 9. Length frequency distribution of herring. ROE HERRING CHARTER SEINER "CHRISTAV", STAT. AREA 2E, 1985.

Section (Area)	Set No.	Location	D/M/Y	Time	Biol. sample No.	Length Frequency (cm) 12-13	13-14	14-15	15-16	16-17	17-18	18-19	19-20	20-21	21-22	22-23	23-24	24-25	25-26	26-27	27-28	Sample size	Average length (cm)	Cutoff (cm)	% Below cutoff
024 (2E)	1	1/2 mi S. of Werner Pt.	04/03/85	1705		Water haul																			
025 (2E)	2	W. Side of Huxley I.	04/03/85	1800		Water haul																			
025 (2E)	3	W. Side of Huxley I.	04/03/85	1930	1								13	25	24	17	14	10				101	21.8	19.0	0
024 (2E)	4	All Alone Stone	05/03/85	0830	2								8	19	21	16	24	9	2			99	22.2	19.5	1
025 (2E)	5	W. Side of Bush Rock	05/03/85	1320	3									1	8	11	24	35	17	3		99	24.0	19.0	0
025 (2E)	6	S. of Slug Islet	05/03/85	1955	4									2	8	18	28	30	13	1		100	23.7	19.0	0
024 (2E)	7	1/2 mi W. of Ustes Pt.	06/03/85	1250	5								3	8	16	22	24	18	7	2		100	23.0	19.0	0
025 (2E)	8	Newberry Pt.	07/03/85	0930		Water haul																			
025 (2E)	9	Off Jedway on Edge	07/03/85	1935	6									4	9	19	31	26	10	1		100	23.5	19.0	0
024 (2E)	10	Juan Perez	08/03/85	1235	7								1	5	25	40	13	12	4			100	22.6	19.0	0
025 (2E)	11	W. Side of Huxley I.	08/03/85	1650		Water haul																			
025 (2E)	12	1/2 mi S. of Newberry Pt.	08/03/85	1735	8						1	0	2	9	25	27	18	14	5			101	22.6	19.0	1
025 (2E)	13	Skincuttle Inlet	08/03/85	2055	9								1	9	14	27	27	14	6			98	22.9	19.0	0

Table 9 (cont'd). Length frequency distribution of herring. ROE HERRING CHARTER SEINER "CHRISTAV", STAT. AREA 2E, 1985.

Section (Area)	Set No.	Location	D/M/Y	Time	Biol. sample No.	Length Frequency (cm) 12-13	13-14	14-15	15-16	16-17	17-18	18-19	19-20	20-21	21-22	22-23	23-24	24-25	25-26	26-27	27-28	Sample size	Average length (cm)	Cutoff (cm)	% Below cutoff
025 (2E)	14	Huston Inlet	09/03/85	0745		Water haul																			
025 (2E)	15	Huston Inlet	09/03/85	0835	10								1	4	12	16	35	23	9			100	23.4	19.0	0
025 (2E)	16	Elsua Rock	09/03/85	1600	11								3	14	19	19	24	14	6			99	22.6	19.0	0
025 (2E)	17	Huston Inlet	10/03/85	0730	12							2	1	12	8	26	21	25	6			101	23.0	19.0	2
025 (2E)	18	Off Harriet Harbour	10/03/85	1440	13									2	9	20	14	24	10			79	23.5	19.0	0
025 (2E)	19	Huston Inlet	10/03/85	1920	14						1	0	3	10	15	17	24	19	10	1		100	23.0	19.0	1
025 (2E)	20	Bush Peak Rks.	11/03/85	0726	15								1	3	15	20	26	13	3			81	23.0	19.0	0
025 (2E)	21	Huston Inlet	11/03/85	0915	16									7	12	22	34	15	10			100	23.2	19.0	0
025 (2E)	22	Between Huxley & Park I.	12/03/85	1800	17							2	15	29	20	9	17	5	1	2		100	21.6	19.0	2
024 (2E)	23	1/2 mi E. of Ustes Pt.	14/03/85	0610	18					6	26	7	23	19	9	6	2	0	1	2		101	19.6	19.0	39
025 (2E)	24	Park I.	15/03/85	1415		Water haul																			

Table 9 (cont'd). Length frequency distribution of herring. ROE HERRING CHARTER SEINER "CHRISTAV", STAT. AREA 2E, 1985.

Section (Area)	Set No.	Location	D/M/Y	Time	Biol. sample No.	Length Frequency (cm) 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28	Sample size	Average length (cm)	Cutoff (cm)	% Below cutoff
025 (2E)	25	1/2 mi S. of Newberry Pt.	15/03/85	1910		Water haul				
025 (2E)	26	1/2 mi S. of Newberry Pt.	15/03/85	2020	19	8 20 33 16 16 5 1	99	21.8	19.0	0
025 (2E)	27	Head of Huston Inlet	16/03/85	1025	20	1 2 8 13 25 25 15 7 4	100	23.0	19.0	1
024 (2E)	28	Werner Pt.	17/03/85	2045		No length measurements taken				
025 (2E)	29	Newberry Pt.	17/03/85	2135	21	1 0 10 36 28 16 7 1 1	100	21.3	19.0	1
025 (2E)	30	Blue Jay Cove	18/03/85	1310		Water haul				
025 (2E)	31	Sea Pigeon I.	19/03/85	0915	22	3 9 17 18 30 17 6 2	102	23.0	19.0	0
024 (2E)	32	Haswell I.	21/03/85	0850		Water haul				
024 (2E)	33	Sedgewick Bay	22/03/85	0550	23	1 16 23 26 15 13 5 2 1	102	21.6	19.0	1
024 (2E)	34	Sedgewick Bay	23/03/85	2020	24	9 15 25 15 10 6	80	21.8	19.0	0
024 (2E)	35	Sedgewick Bay	24/03/85	1715		Water haul				

Table 9 (cont'd). Length frequency distribution of herring. ROE HERRING CHARTER SEINER "CHRISTAV", STAT. AREA 2E, 1985.

Section (Area)	Set No.	Location	D/M/Y	Time	Biol. sample No.	Length Frequency (cm) 12-13	13-14	14-15	15-16	16-17	17-18	18-19	19-20	20-21	21-22	22-23	23-24	24-25	25-26	26-27	27-28	Sample size	Average length (cm)	Cutoff (cm)	% Below cutoff
024 (2E)	36	Sedgewick Bay	24/03/85	1955	25							1	1	14	26	24	21	10	3			100	22.4	19.0	1
024 (2E)	37	Atli Inlet	28/03/85	0830	26					1	1	3	31	33	18	8	2	1	1			99	20.6	19.0	5
024 (2E)	38	Selwyn Inlet	28/03/85	2130	27						2	6	10	22	28	14	15	1	2			100	21.4	19.0	8
023 (2E)	39	Cumshewa Inlet			Water haul																				
023 (2E)	40	Cumshewa Inlet			Water haul																				
024 (2E)	41	Selwyn Inlet	30/03/85	2015	28				1	5	8	6	17	25	17	14	7	3				103	20.5	19.0	19
025 (2E)		1/2 mi N. of Park I.	17/03/85	1230	Herring ball sample							3	8	25	18	27	19	5				103	21.8	19.0	3

Table 10. Seine set data and roe yield information. ROE HERRING CHARTER SEINER "PACIFIC OCEAN," STAT. AREAS 3-5, 1985.

Section (Area)	Set No.	Location	D/M/Y	Time	Dep. (fa)	Tonnage			Temp (°C)	Test No.	Sex Ratio				Roe Yield %		Roe Grade (Pcs)			Spnd. out	Juv. or immat.
						In loc.	Set on	Est. catch			M		F		Vol.	Adj. vol.	#1	#2	#3		
											No.	%	No.	%							
033 (3)	1	Cunningham Pass	15/03/85	1800	20	1200	300	150	6.0	1	70	52	64	48	0	-	4	2	58		
										2	73	56	58	44	0	-	1	4	53		
032 (3)	2	Hogan I.	16/03/85	1030	40		400		6.2		Water haul										
052 (5)	3	Snass Pt.	17/03/85	2050	22			100 lb			Water haul										
052 (5)	4	Clamshell I.	19/03/85	0615	22		10	1	5.9	1	57	46	66	54	9.5	8.8	42	11	13		
										2	59	49	61	51	9.0	8.8	41	6	14		
052 (5)	5	Robert I.	19/03/85	0650	23		10		6.0		Water haul										
052 (5)	6	Kitkatla	20/03/85	1000	23		40		5.9		Water haul										
052 (5)	7	Kitkatla	20/03/85	2045					6.0		Water haul										
052 (5)	8	Kitkatla, Gurd Pt.	21/03/85	1115	18	300	150	100	6.1	1	80	58	57	42	6.0	7.1	30	6	21		
										2	69	53	62	47	6.0	6.4	34	10	18		
052 (5)	9	Kitkatla, Gurd Pt.	22/03/85	0815	22				5.9		Water haul										
052 (5)	10	Kitkatla	22/03/85	0910	16	300	100		5.9		Water haul										
052 (5)	11	Kitkatla	22/03/85	1035	15	300	150	100	5.9	1	74	56	59	44	10.0	11.4	46	4	9	1	
										2	60	50	61	50	11.0	11.0	48	6	7		
										3	72	56	57	44	7.0	8.0	41	10	6		
										4	67	51	65	49	12.0	12.2	53	5	7		

Table 10 (cont'd). Seine set data and roe yield information. ROE HERRING CHARTER SEINER "PACIFIC OCEAN," STAT. AREAS 3-5, 1985.

Section (Area)	Set No.	Location	D/M/Y	Time	Dep. (fa)	Tonnage			Temp (°C)	Test No.	Sex Ratio				Roe Yield %		Roe Grade (Pcs)			Spnd. out	Juv. or immat.
						In loc.	Set on	Est. catch			M		F		Vol.	Adj. vol.	#1	#2	#3		
											No.	%	No.	%							
052 (5)	12	Kitkatla	23/03/85	0645	24	400	60	20	5.9	1	65	55	54	45	10.5	11.7	46	4	4		
										2	68	54	58	46	8.5	9.2	45	4	9	2	
										3	68	53	61	47	9.0	9.6	49	5	7		
052 (5)	13	Snass Pt.	23/03/85	1410	25		30		6.0		Water haul										
052 (5)	14	Gurd Pt.	24/03/85	1015	18	300	40	20	6.0	1	86	62	52	38	8.0	10.5	40	6	6	1	
										2	71	54	60	46	10.0	10.9	53	3	4	2	
										3	71	51	67	49	12.0	12.2	61	4	2		
										4	73	51	69	49	13.0	13.3	64	2	3	1	
052 (5)	15	S. of Gurd Pt.	25/03/85	0730	20		50	2	6.0	1	65	54	56	46	12.0	13.0	51	3	2		5
										2	68	61	44	39	9.5	12.2	43	1	0	2	5
										3	61	52	57	48	13.0	13.5	55	0	2		4
052 (5)	16	W. of Gurd Pt.	25/03/85	1115	22		40	100 lb	6.0	1	74	56	58	44	8.0	9.1	41	1	16	11	4
052 (5)	17	Robert I.	26/03/85	0720	19		100	100	6.1	1	61	50	62	50	14.0	14.0	61	1	0		
										2	52	43	70	57	14.0	12.3	67	0	3		
										3	62	49	65	51	12.5	12.3	64	0	1		
052 (5)	18	Billy I.	26/03/85	1130	25		400	150	6.5	1	61	46	71	54	14.0	13.0	71	0	0		
										2	81	61	52	39	11.0	14.1	52	0	0		
										3	70	55	57	45	12.0	13.3	55	0	2		
052 (5)	19	Shakes I.	26/03/85	1635	25		50		6.9		Water haul										
052 (5)	20	Shakes I.	26/03/85	1720	25		50		6.9		Water haul										

Table 10 (cont'd). Seine set data and roe yield information. ROE HERRING CHARTER SEINER "PACIFIC OCEAN," STAT. AREAS 3-5, 1985.

Section (Area)	Set No.	Location	D/M/Y	Time	Dep. (fa)	Tonnage			Temp (°C)	Test No.	Sex Ratio				Roe Yield %		Roe Grade (Pcs)			Spnd. out	Juv. or immat.
						In loc.	Set on	Est. catch			M		F		Vol.	Adj. vol.	#1	#2	#3		
											No.	%	No.	%							
052 (05)	21	Freeman Passage	28/03/85		30		200		6.2		Water haul										
052 (5)	22[B]	Kitkatla	29/03/85	1025	15		100	60	6.2	1	69	52	63	48	12.5	13.0	63	0	0		
										2	76	57	57	43	11.5	13.4	57	0	0		
										3	68	51	66	49	13.0	13.3	62	3	1		
										4	69	51	66	49	14.0	14.3	66	0	0	2	
052 (5)	23	Kitkatla	30/03/85	1000	15				6.5		Water haul										
052 (5)	24	W. Side Gurd Pt. (Gravel Pit)	30/03/85	1230	15		100	50	8.9	1	70	53	61	47	11.2	11.9	54	4	3	1	
										2	67	47	75	53	12.0	11.3	66	5	4		
										3	70	48	77	52	12.3	11.8	72	4	1		
043 (4)	25	Ettrick Rock	02/04/85	1140	40		100		6.6		Water haul										
043 (4)	26	N. of Creak I.	02/04/85	1835	33		40	40	6.8	1	67	49	69	51	11.0	10.8	64	0	5		
										2	72	52	66	48	10.0	10.4	56	3	7		
043 (4)	27	Havelock Rock	03/04/85	1930	38		400	300	6.9	1	73	50	73	50	12.5	12.5	70	0	3	1	
										2	78	57	60	43	11.0	12.8	56	1	3		
052 (5)	28	Robert I.	04/04/85	1500	20		200	150	6.9	1	67	52	61	48	14.0	14.6	60	1	0		
										2	59	46	69	54	14.0	13.0	68	0	1	1	
052 (5)	29	Willis Bay	05/04/85	1230	24	300	50		7.0		Water haul										
052 (5)	30	Willis Bay	06/04/85	0720	27		300	200	6.7	1	61	47	69	53	12.0	11.3	60	1	8		
										2	45	36	81	64	14.0	10.9	76	4	1		
										3	53	40	79	60	12.0	10.0	72	4	3		

Table 10 (cont'd). Seine set data and roe yield information. ROE HERRING CHARTER SEINER "PACIFIC OCEAN," STAT. AREAS 3-5, 1985.

Section (Area)	Set No.	Location	D/M/Y	Time	Dep. (fa)	Tonnage: In loc.	Tonnage: Set on	Tonnage: Est. catch	Temp (°C)	Test No.	Sex Ratio: M No.	Sex Ratio: M %	Sex Ratio: F No.	Sex Ratio: F %	Roe Yield %: Vol.	Roe Yield %: Adj. vol.	Roe Grade (Pcs): #1	#2	#3	Spnd. out	Juv. or immat.
052		Hess I.	24/03/85	Herring ball						1	46	71	19	29	2.0	3.4	18	1	0	72	
(5)			DFO patrol vessel - dipnet sample							2	33	63	19	37	2.0	2.7	19	0	0	77	
043		Hunts Inlet	03/04/85	1830	25		200	75		1	73	48	78	52	13.0	12.5	71	0	7		
(4)		Sample from Ocean Cape (spn. on kelp pond)								2	72	49	74	51	11.0	10.8	68	0	6	3	

[a] Charter payment herring.

Table 11. Length frequency distribution of herring. ROE HERRING CHARTER SEINER "PACIFIC OCEAN," STAT. AREAS 3-5, 1985.

Section (Area)	Set No.	Location	D/M/Y	Time	Biol. sample No.	Length Frequency (cm) 12-13	13-14	14-15	15-16	16-17	17-18	18-19	19-20	20-21	21-22	22-23	23-24	24-25	25-26	26-27	27-28	Sample size	Average length (cm)	Cutoff (cm)	% Below cutoff
033 (3)	1	Cunningham Pass	15/03/85	1800	1				1		4	5	24	30	20	10	4					98	20.5	18.5	5
032 (3)	2	Hogan I.	16/03/85	1030	Water haul																				
052 (5)	3	Snass Pt.	17/03/85	2050	2	Water haul																			
052 (5)	4	Clamshell I.	19/03/85	0615	3							7	17	20	28	11	13	3	1			100	21.2	18.5	1
052 (5)	5	Robert I.	19/03/85	0650	Water haul																				
052 (5)	6	Kitkatla	20/03/85	1000	Water haul																				
052 (5)	7	Kitkatla	20/03/85	2045	4	Water haul																			
052 (5)	8	Kitkatla, Gurd Pt.	21/03/85	1115	5							13	23	25	14	19	4	4				102	20.8	18.5	4
052 (5)	9	Kitkatla, Gurd Pt.	22/03/85	0815	Water haul																				
052 (5)	10	Kitkatla	22/03/85	0910	Water haul																				
052 (5)	11	Kitkatla	22/03/85	1035	6						1	8	24	23	17	15	9	3				100	20.9	18.5	4
052 (5)	12	Kitkatla	23/03/85	0645	7							5	17	24	20	23	8	3				100	21.2	18.5	1
052 (5)	13	Snass Pt.	23/03/85	1410	Water haul																				
052 (5)	14	Gurd Pt.	24/03/85	1015	8					1	4	10	29	24	17	7	6	2				100	20.4	18.5	6
052 (5)	15	S. of Gurd Pt.	25/03/85	0730	9			1	1	1	2	4	15	21	19	22	10	3	1			100	20.4	18.5	7
052 (5)	16	W. of Gurd Pt.	25/03/85	1115	10				1	3	6	20	15	10	11	16	12	4	2			100	20.7	18.5	22

Table 11 (cont'd). Length frequency distribution of herring. ROE HERRING CHARTER SEINER "PACIFIC OCEAN," STAT. AREAS 3-5, 1985.

Section (Area)	Set No.	Location	D/M/Y	Time	Biol. sample No.	Length Frequency (cm) 12-13	13-14	14-15	15-16	16-17	17-18	18-19	19-20	20-21	21-22	22-23	23-24	24-25	25-26	26-27	27-28	Sample size	Average length (cm)	Cutoff (cm)	% Below cutoff
052 (5)	17	Robert I.	26/03/85	0720	11							8	22	22	18	19	7	4				100	21.1	18.5	2
052 (5)	18	Billy I.	26/03/85	1130	12						2	6	20	29	19	13	8	3				100	20.9	18.5	5
052 (5)	19	Shakes I.	26/03/85	1635	Water haul																				
052 (5)	20	Shakes I.	26/03/85	1720	Water haul																				
052 (5)	21	Freeman Passage	28/03/85		Water haul																				
052 (5)	22	Kitkatla	29/03/85	1025	13							12	21	20	16	25	5	0	1			100	20.9	18.5	6
052 (5)	23	Kitkatla	30/03/85	1000	Water haul																				
052 (5)	24	W. Side Gurd Pt. (Gravel Pit)	30/03/85	1230	14			2		1	11	24	34	12	10	4	2					100	19.4	18.5	22
043 (4)	25	Ettrick Rock	02/04/85	1140	Water haul																				
043 (4)	26	N. of Creak I.	02/04/85	1835	15							11	26	32	16	13	2					100	20.5	18.5	3
043 (4)	27	Havelock Rock	03/04/85	1930	16						2	17	28	22	15	11	4	1				100	20.4	18.5	12
052 (5)	28	Robert I.	04/04/85	1500	17						3	2	21	25	30	14	5	1	1			102	21.0	18.5	3
052 (5)	29	Willis Bay	05/04/85	1230	Water haul																				
052 (5)	30	Willis Bay	06/04/85	0720	18					2	1	6	14	30	20	14	10	2	1	1		101	21.1	18.5	6

Table 11 (cont'd). Length frequency distribution of herring. ROE HERRING CHARTER SEINER "PACIFIC OCEAN," STAT. AREAS 3-5, 1985.

Section (Area)	Set No.	Location	D/M/Y	Time	Biol. sample No.	Length Frequency (cm) 12 13	13 14	14 15	15 16	16 17	17 18	18 19	19 20	20 21	21 22	22 23	23 24	24 25	25 26	26 27	27 28	Sample size	Average length (cm)	Cutoff (cm)	% Below cutoff
052 (5)		Ness I.	24/03/85		Herring bail						2	9	29	22	19	15	3		1			100	20.6	18.5	6
			DFO patrol vessel - dipnet sample																						
043 (4)		Hunts Inlet	03/04/85	1830					2	1	6	19	23	24	3	7	3	1	1			100	20.0	18.5	16
		Sample from Ocean Cape (spn. on kelp pond)																							

Table 12. Seine set data and roe yield information. ROE HERRING CHARTER SEINER "ARGENT FISHER", STAT. AREAS 3-5, 1985.

Section (Area)	Set No.	Location	D/M/Y	Time	Dep. (fa)	Tonnage In loc.	Tonnage Set on	Tonnage Est. catch	Temp (°C)	Test No.	Sex Ratio M No.	Sex Ratio M %	Sex Ratio F No.	Sex Ratio F %	Roe Yield % Vol.	Roe Yield % Adj. vol.	Roe Grade (Pcs) #1	Roe Grade (Pcs) #2	Roe Grade (Pcs) #3	Spnd. out	Juv. or immat.
033 (3)	1	Flewin Pt.	20/03/85	1417	35		100		6.5		Water haul										
033 (3)	2	Haida Bay	20/03/85	1803	50	3000	350	300	6.4	1	72	51	70	49	1.0	1.0	7	11	52		
										2	76	55	63	45	4.0	4.4	21	12	30		
										3	68	47	78	53	4.0	3.8	19	12	47		
033 (3)	3	Top Cunningham Pass	21/03/85	0743	30	1700	300	120	6.2	1	65	52	60	48	7.0	7.3	34	8	18		
										2	67	52	62	48	7.0	7.3	35	7	20		
033 (3)	4	Inside Birnie I.	21/03/85	1945	25	1000	250	200	6.4	1	57	44	73	56	8.0	7.1	39	13	21		
										2	80	58	58	42	7.0	8.3	37	7	14		
										3	80	60	54	40	6.0	7.5	29	6	19		
042 (4)	5	Pearl Harbour	22/03/85	1026	15	800	250	200	6.5	1	81	58	59	42	6.0	7.1	31	10	18		
										2	83	62	50	38	6.0	7.9	30	11	9		
										3	77	56	61	44	8.0	9.1	39	8	14		
033 (3)	6	Port Simpson Bay	23/03/85	0530	25	500	50	25	6.1	1	71	53	62	47	5.0	5.3	31	13	18		10
										2	72	53	63	47	5.0	5.3	34	9	20		7
										3	65	45	78	55	6.0	5.5	38	9	31		6
042 (4)	7	Pearl Harbour	23/03/85	1845	18	1200	40	75	6.3	1	62	46	73	54	11.5	10.6	53	10	10		
										2	68	53	60	47	10.0	10.6	49	7	4		
										3	73	54	63	46	8.5	9.2	42	13	8		
033 (3)	8	Cunningham Pass	24/03/85	0910	25	1500/2000	100		6.2	1	83	62	51	38	7.0	9.2	34	8	9		
										2	70	52	65	48	8.5	8.9	45	5	15		
										3	66	53	59	47	8.5	9.0	45	4	10		
033 (3)	9	Cunningham Pass	24/03/85	1321	15		100	300	6.4	1	66	47	73	53	9.0	8.5	48	9	16		
										2	74	56	59	44	8.0	9.1	41	3	15		
										3	79	56	62	44	8.0	9.1	40	8	14		

Table 12 (cont'd). Seine set data and roe yield information. ROE HERRING CHARTER SEINER "ARGENT FISHER", STAT. AREAS 3-5, 1985.

Section (Area)	Set No.	Location	D/M/Y	Time	Dep. (fa)	Tonnage			Temp (°C)	Test No.	Sex Ratio				Roe Yield %		Roe Grade (Pcs)			Spnd. out	Juv. or immat.
						In loc.	Set on	Est. catch			M		F		Vol.	Adj. vol.	#1	#2	#3		
											No.	%	No.	%							
033 (3)	10	Haida Bay	24/03/85	1702	50					Water haul											
042 (4)	11	Pearl Harbour	25/03/85	1031	20		40	5	6.0	1	66	46	78	54	0.5	0.5	2	26	50		
										2	60	45	72	55	1.0	0.9	7	15	50		
033 (3)	12	Haida Bay	25/03/85	1849	47		100		6.5	Water haul											
033 (3)	13	Haida Bay	26/03/85	0825	52	700	150	100	6.3	1	93	51	90	49	1.0	1.0	11	6	73		9
										2	80	46	94	54	1.0	0.9	13	4	77		8
033 (3)	14	Haida Bay	26/03/85	1022	32	700	150	50	6.3	1	84	53	75	47	5.0	5.3	31	8	36		5
										2	79	49	83	51	5.5	5.4	39	15	29		3
										3	83	52	76	48	6.5	6.8	36	11	29		2
052 (5)	15	Wilcox Group	27/03/85	1036	10		75/100			Water haul											
052 (5)	16	Off Gurd Pt.	27/03/85	1221	15		130	100	6.6	1	64	53	56	47	11.0	11.7	50	3	3		
										2	59	49	62	51	13.0	12.7	61	0	1		1
										3	58	44	73	56	15.0	13.4	71	0	2		
052 (5)	17	Top End Gurd I.	29/03/85	1347	10		15	15		1	74	55	61	45	12.0	13.3	61	0	0		
										2	66	52	61	48	13.0	13.5	61	0	0		
										3	74	53	65	47	13.0	13.8	64	0	1		
052 (5)	18[8]	S. End Gurd I.	30/03/85	0845	20			50	6.4	1	65	49	69	51	14.0	13.7	69	0	0		
										2	82	63	48	37	9.0	12.2	46	0	2		
										3	70	57	52	43	11.0	12.8	49	0	3		
										4	71	53	63	47	14.0	14.9	61	0	2		

Table 12 (cont'd). Seine set data and roe yield information. ROE HERRING CHARTER SEINER "ARGENT FISHER", STAT. AREAS 3-5, 1985.

Section (Area)	Set No.	Location	D/M/Y	Time	Dep. (fa)	Tonnage: In loc.	Tonnage: Set on	Tonnage: Est. catch	Temp (°C)	Test No.	Sex Ratio: M No.	Sex Ratio: M %	Sex Ratio: F No.	Sex Ratio: F %	Roe Yield %: Vol.	Roe Yield %: Adj. vol.	Roe Grade (Pcs): #1	#2	#3	Spnd. out	Juv. or immat.
052 (5)	19[a]	Clamshell I.	30/03/85	1315	11			70	6.5	1	67	52	62	48	14.2	14.8	60	1	1		
										2	57	43	77	57	14.5	12.7	71	1	5		
										3	54	39	83	61	16.0	13.1	80	0	3		1
										4	83	59	57	41	11.0	13.4	54	1	2		
										5	74	53	66	47	11.0	11.7	62	1	3		
			28/03/85		Fishery sample (Ocean Cavalier)					1	61	47	69	53	12.0	11.3	65	1	3		
										2	66	49	68	51	12.0	11.8	62	0	6		

[a] Charter payment herring (approx. 55 tons for Pacific Ocean).

Table 13. Length frequency distribution of herring. ROE HERRING CHARTER SEINER "ARGENT FISHER", STAT. AREAS 3-5, 1985.

Section (Area)	Set No.	Location	D/M/Y	Time	Biol. sample No.	Length Frequency (cm) 12-13	13-14	14-15	15-16	16-17	17-18	18-19	19-20	20-21	21-22	22-23	23-24	24-25	25-26	26-27	27-28	Sample size	Average length (cm)	Cutoff (cm)	% Below cutoff
033 (3)	1	Flewin Pt.	20/03/85	1417		Water haul																			
033 (3)	2	Haida Bay	20/03/85	1803	16					1	1	14	21	32	14	14	3					100	20.5	18.5	9
033 (3)	3	Top Cunningham Pass	21/03/85	0743	17						2	6	18	29	20	18	7					100	20.9	18.5	5
033 (3)	4	Inside Birnie I.	21/03/85	1945	18						5	5	22	32	17	16	1	2				100	20.6	18.5	7
042 (4)	5	Pearl Harbour	22/03/85	1026	19						1	2	14	41	27	8	5	2				100	21.0	18.5	2
033 (3)	6	Port Simpson Bay	23/03/85	0530	20					4	2	14	14	28	24	10	4					100	20.4	18.5	13
042 (4)	7	Pearl Harbour	23/03/85	1845	21						1	5	24	23	26	14	6		1			100	20.9	18.5	1
033 (3)	8	Cunningham Pass	24/03/85	0910	22					1	1	8	17	25	24	19	2	2	1			100	20.9	18.5	5
033 (3)	9	Cunningham Pass	24/03/85	1321	23					1	7	13	30	20	14	10	2	1	2			100	20.2	18.5	17
033 (3)	10	Haida Bay	24/03/85	1702		Water haul																			
042 (4)	11	Pearl Harbour	25/03/85	1031	24						4	12	23	21	25	8	5	1	1			100	20.6	18.5	8
033 (3)	12	Haida Bay	25/03/85	1849		Water haul																			
033 (3)	13	Haida Bay	26/03/85	0825	25					3	11	37	32	12	5							100	19.0	18.5	29
033 (3)	14	Haida Bay	26/03/85	1022	26						9	20	36	24	5	3	2		1			100	19.7	18.5	19
052 (5)	15	Wilcox Group	27/03/85	1036		Water haul																			
052 (5)	16	Off Gurd Pt.	27/03/85	1221	27							9	19	25	18	15	10	3	1			100	21.1	18.5	1

Table 13 (cont'd). Length frequency distribution of herring. ROE HERRING CHARTER SEINER "ARGENT FISHER", STAT. AREAS 3-5, 1985.

Section (Area)	Set No.	Location	D/M/Y	Time	Biol. sample No.	Length Frequency (cm) 12-13	13-14	14-15	15-16	16-17	17-18	18-19	19-20	20-21	21-22	22-23	23-24	24-25	25-26	26-27	27-28	Sample size	Average length (cm)	Cutoff (cm)	% Below cutoff
052 (5)	17	Top End Gurd I.	29/03/85	1347	28						5	8	23	28	18	13	5					100	20.6	18.5	10
052 (5)	18	S. End Gurd I.	30/03/85	0845	29				1			7	12	16	8	5	1					50	20.3	18.5	6
052 (5)	19	Clamshell I.	30/03/85	1315	30							10	25	30	22	9	8	1				105	20.7	18.5	6
			28/03/85		Fishery sample																	No length measurements taken			

Table 14. Seine set data and roe yield information. ROE HERRING CHARTER SEINER "FISHER LASSIE II", STAT. AREAS 6-8, 1985.

Section (Area)	Set No.	Location	D/M/Y	Time	Dep. (fa)	Tonnage: In loc.	Tonnage: Set on	Tonnage: Est. catch	Temp (°C)	Test No.	Sex Ratio: M No.	Sex Ratio: M %	Sex Ratio: F No.	Sex Ratio: F %	Roe Yield %: Vol.	Roe Yield %: Adj. vol.	Roe Grade (Pcs): #1	#2	#3	Spnd. out	Juv. or immat.
074 (7)	1	West Maskesiu Passage	01/03/85	2000	55	800/900	300	250	6.3	1	44	45	54	55	0	-	0	2	52		
085 (8)	2	Kwakshua Channel	02/03/85	1910	90	1000	100	70	6.4	1	71	49	75	51	0	-	0	2	73		
074 (7)	3	Boddy Passage	03/03/85	1910	35	600	500	50	5.7	1	53	50	54	50	0	-	3	5	46		
074 (7)	4	Bullen Rock in Seaforth Ch.	05/03/85	2030	20	300/400	300/400	40/50	5.7	1	46	38	76	62	0	-	4	9	63		
074 (7)	5	Mouth Dundivan Inlet	06/03/85	0530	40	1000/1500	200/300	30/40	5.6	1	102	52	94	48	0	-	2	2	90		
074 (7)	6	West Maskesiu Passage	06/03/85	1955	50	1000	200/300	100	6.5	1	44	37	74	63	0	-	2	22	50		
074 (7)	7	East Princess Alice I.	07/03/85	0615	50	200/300	200/300	50/60	6.3	1	39	40	59	60	0	-	3	31	25		
071 (7)	8	Spiller Channel (Locke I. to Shingle Rk.)	07/03/85	2130	30	600	600	75	6.3	1	56	50	56	50	0	-	9	16	31		
074 (7)	9	Outside Dundivan Inlet	07/03/85	2330	60	1000	600/700	200/300	6.2	1	64	60	42	40	0	-	2	25	15		
074 (7)	10	Boddy Narrows (Isabel Pt.)	08/03/85	2100	20	500	300	100/200	6.5	1	43	39	66	61	5.0	4.1	23	21	22		
										2	29	29	70	71	0	-	0	33	37		
										(Problems ident. mature roe)											
071 (7)	11	1 mi below Meekas Inlet	10/03/85	0935		1000	500/600	20	6.1	1	30	38	50	62	17.0	13.7	41	6	3		
										2	36	45	44	55	14.5	13.2	37	5	2		

Table 14 (cont'd). Seine set data and roe yield information. ROE HERRING CHARTER SEINER "FISHER LASSIE II", STAT. AREAS 6-8, 1985.

Section (Area)	Set No.	Location	D/M/Y	Time	Dep. (fa)	Tonnage: In loc.	Tonnage: Set on	Tonnage: Est. catch	Temp (°C)	Test No.	Sex Ratio: M No.	Sex Ratio: M %	Sex Ratio: F No.	Sex Ratio: F %	Roe Yield %: Vol.	Roe Yield %: Adj. vol.	Roe Grade (Pcs): #1	#2	#3	Spnd. out	Juv. or immat.
071 (7)	12	Neekas Bay	10/03/85	1045		1500/2000	200		6.2		Water haul										
071 (7)	13	Neekas Bay	10/03/85	1135		1500/2000	150		6.4		Water haul										
071 (7)	14	Neekas Bay	10/03/85	1455			300/400		6.7		Water haul										
071 (7)	15	Neekas Bay	10/03/85	1545			300/400		6.6		Water haul										
071 (7)	16	Outside Neekas Bay (sample not representative)	10/03/85	1750		2000	300/400	10	6.6	1	35	39	55	61	10.0	8.2	33	2	20		
										2	49	49	52	51	9.8	9.6	34	2	16		
071 (7)	17	Neekas Bay	10/03/85	1945		2500/3000	300	150	6.6	1	45	52	41	48	10.0	10.4	29	4	8		
										2	35	44	44	56	12.5	11.2	36	2	6		
										3	35	42	48	58	15.0	12.9	43	3	2		
										4	40	45	49	55	13.5	12.3	40	7	2		
										5	50	56	40	44	10.0	11.4	31	2	7		
071 (7)	18	2 mi above Neekas Bay	11/03/85	1035		2500	300/400	150/200	6.7	1	29	35	54	65	15.0	11.5	50	2	2		
										2	38	44	48	56	15.0	13.4	43	2	3		
										3	44	49	45	51	14.0	13.7	39	2	4		
										4	40	44	50	56	15.0	13.4	45	1	4		
										5	41	44	53	56	14.0	12.5	44	1	8		
067 (6)	19	Kitasu Bay	14/03/85	1955	20	700/800	300	75	6.4	1	71	58	51	42	6.0	7.1	28	7	16		
										2	69	57	52	43	8.0	9.3	32	8	12		
										3	58	48	64	52	8.0	7.7	33	1	30		

Table 14 (cont'd). Seine set data and roe yield information. ROE HERRING CHARTER SEINER "FISHER LASSIE II", STAT. AREAS 6-8, 1985.

Section (Area)	Set No.	Location	D/M/Y	Time	Dep. (fa)	Tonnage			Temp (°C)	Test No.	Sex Ratio				Roe Yield %		Roe Grade (Pcs)			Spnd. out	Juv. or immat.
						In loc.	Set on	Est. catch			M		F		Vol.	Adj. vol.	#1	#2	#3		
											No.	%	No.	%							
072 (7)	20	Berry Inlet	16/03/85	0905		400/500	200	200	6.5	1	34	33	68	67	14.0	10.4	55	6	7		
										2	65	50	65	50	13.0	13.0	55	6	4		
										3	56	50	55	50	11.5	11.5	43	4	8		
067 (6)	21	East Higgins Passage	17/03/85	0740		700/800	300	200	5.9	1	43	45	53	55	12.0	10.9	42	5	6		
										2	45	48	48	52	12.0	11.5	41	2	5		
										3	44	45	53	55	11.0	10.0	37	3	13		
067 (6)	22	East Higgins Passage (Outside Lagoon)	19/03/85	0615		1000/1500	500/600	200/300	6.1	1	53	45	64	55	10.0	9.1	43	5	16		
										2	66	56	51	44	8.0	9.1	33	10	8		
										3	59	52	54	48	9.0	9.4	39	7	8		
067 (6)	23	In front of Higgins Lagoon	19/03/85	1840		1000/1500	30/40	10	6.2	1	55	56	44	44	12.0	13.6	41	1	2		
										2	62	60	41	40	11.0	13.8	38	1	2		
										3	54	52	49	48	13.0	13.5	43	2	4		
071 (7)	24	East Price I.	20/03/85	0440		2000/2500		20/30	6.0	1	70	53	61	47	9.0	9.6	42	5	14		
										2	82	59	57	41	8.0	9.8	35	5	17		
										3	78	57	59	43	6.0	7.0	33	10	16		
071 (7)	25	East Higgins Narrows	20/03/85	0630		2000/2500	100	100	5.8	1	70	56	56	44	10.0	11.4	50	2	4		
										2	65	56	51	44	9.0	10.2	43	4	4		
										3	70	59	49	41	8.0	9.8	43	3	3		
071 (7)	26	Across from Pidwell Reef	20/03/85	0900		500/600	200/300		6.2	Water haul											
071 (7)	27	3 1/2 mi in from Langford Cove	20/03/85	1000		500/600	200		6.2	Water haul											
071 (7)	28	1 mi inside Langford Cove	20/03/85	1020		500/600	200	50	6.2	1	62	54	52	46	9.5	10.3	40	6	6		
										2	57	50	57	50	13.0	13.0	52	0	5		
										3	84	68	39	32	8.0	12.5	33	1	5		
										4	50	45	61	55	13.5	12.3	53	2	6		

Table 14 (cont'd). Seine set data and roe yield information. ROE HERRING CHARTER SEINER "FISHER LASSIE II", STAT. AREAS 6-8, 1985.

Section (Area)	Set No.	Location	D/M/Y	Time	Dep. (fa)	Tonnage: In loc.	Tonnage: Set on	Tonnage: Est. catch	Temp (°C)	Test No.	Sex Ratio: M No.	Sex Ratio: M %	Sex Ratio: F No.	Sex Ratio: F %	Roe Yield %: Vol.	Roe Yield %: Adj. vol.	Roe Grade (Pcs): #1	#2	#3	Spnd. out	Juv. or immat.
074 (7)	29	West Waskesiu Passage	20/03/85	1940		1000	100	100	6.5	1	60	54	52	46	12.0	13.0	51	0	1		
										2	65	52	59	48	13.0	13.5	50	3	6		
										3	52	42	71	58	15.0	12.9	69	0	2		
074 (7)	30	West Waskesiu Passage	20/03/85	2045		1000 / 1500	300 / 400		6.5		Water haul										
074 (7)	31	East Waskesiu Passage	20/03/85	2105		1000 / 1500	300 / 400	150	6.5	1	40	37	67	63	15.0	11.9	61	0	6		
										2	48	48	51	52	13.0	12.5	48	0	3		
										3	54	49	57	51	12.0	11.8	48	0	9		
074 (7)	32	Stryker Bay	21/03/85	2000		200 / 300	200 / 300	25	6.7	1	60	45	72	55	12.5	11.4	63	1	8		
										2	57	43	76	57	11.0	9.6	63	6	7		
										3	60	46	71	54	13.0	12.0	58	1	12		
074 (7)	33	Dundivan Inlet	22/03/85	2025	20	300	200	200	6.7	1	45	41	65	59	15.5	13.1	57	2	6		
										2	58	50	57	50	12.0	12.0	49	0	8		5
										3	65	51	62	49	13.0	13.3	49	0	13		4
074 (7)	34	Near Idol Pt.	23/03/85	0450	20	150 / 200	100	75	6.5	1	61	52	57	48	12.0	12.5	48	1	8	1	5
										2	61	50	60	50	11.0	11.0	46	1	13	1	6
										3	61	47	70	53	12.0	11.3	55	1	15	1	6
071 (7)	35	Foote I., Spiller Ch.	23/03/85	2010	20		150	75	6.5	1	49	45	59	55	13.5	12.3	55	0	4		1
										2	56	48	60	52	12.5	12.0	53	0	7	1	6
										3	57	48	61	52	14.0	13.5	54	3	4		4
074 (7)	36	East Waskesiu Passage	24/03/85	1945	35				6.7		Water haul										
074 (7)	37[a]	East Waskesiu Passage	24/03/85	2025	35		200	75	6.7	1	41	41	58	59	14.3	12.1	53	1	4	1	
										2	50	53	45	47	12.0	12.8	43	1	1		
										3	56	50	57	50	13.8	13.8	56	1	0		

Table 14 (cont'd). Seine set data and roe yield information. ROE HERRING CHARTER SEINER "FISHER LASSIE II", STAT. AREAS 6-8, 1985.

Section (Area)	Set No.	Location	D/M/Y	Time	Dep. (fa)	Tonnage: In loc.	Tonnage: Set on	Tonnage: Est. catch	Temp (°C)	Test No.	Sex Ratio: M No.	Sex Ratio: M %	Sex Ratio: F No.	Sex Ratio: F %	Roe Yield %: Vol.	Roe Yield %: Adj. vol.	Roe Grade (Pcs): #1	#2	#3	Spnd. out	Juv. or immat.
074 (7)	38[a]	East Waskesiu Passage	25/03/85	0345	40		800	40	6.5	1	57	49	59	51	11.0	10.8	54	0	5		
										2	60	49	63	51	11.5	11.3	57	2	4		
										3	57	48	63	52	12.0	11.5	60	0	3	4	
									Seine fishery samples												
071 (7)	1	Spiller Channel	11/03/85							1	53	47	59	53	10.0	9.4	56	2	1		
										2	38	42	52	58	15.0	12.9	48	3	1		
										3	43	46	51	54	12.0	11.1	39	7	5		
071 (7)	2	Spiller Channel	11/03/85							1	50	46	58	54	11.0	10.2	46	9	3		
										2	50	48	55	52	10.0	9.6	40	6	9		1
										3	53	48	57	52	12.5	12.0	50	2	5		

[a] Charter payment herring.

Table 15. Length frequency distribution of herring. ROE HERRING CHARTER SEINER "FISHER LASSIE II", STAT. AREAS 6-8, 1985.

Section (Area)	Set No.	Location	D/M/Y	Time	Biol. sample No.	Length Frequency (cm) 12-13	13-14	14-15	15-16	16-17	17-18	18-19	19-20	20-21	21-22	22-23	23-24	24-25	25-26	26-27	27-28	Sample size	Average length (cm)	Cutoff (cm)	% Below cutoff
074 (7)	1	West Waskesiu Passage	01/03/85	2000	1						1	4	13	22	15	22	15	9				101	21.6	18.5	1
085 (8)	2	Kwakshua Channel	02/03/85	1910	2				1	1	15	24	24	14	15	5		1				100	19.5	18.5	27
074 (7)	3	Boddy Passage	03/03/85	1910	3						3	7	9	13	17	22	19	7				97	21.7	18.5	7
074 (7)	4	Bullen Rock in Seaforth Ch.	05/03/85	2030	4						4	5	14	21	16	18	21		1			100	21.3	18.5	9
074 (7)	5	Mouth Dundivan Inlet	06/03/85	0530	5	1	1	4	13	21	21	16	18	4			1					100	17.5	18.5	69
074 (7)	6	West Waskesiu Passage	06/03/85	1955	6						1	4	12	17	13	20	21	11	1			100	21.9	18.5	3
074 (7)	7	East Princess Alice I.	07/03/85	0615	7						2	6	14	12	8	18	22	13	3	1		99	22.0	18.5	5
071 (7)	8	Spiller Channel (Locke I. to Shingle Rk.)	07/03/85	2130	8					4	4	6	21	18	8	19	15	5				100	21.0	18.5	13
074 (7)	9	Outside Dundivan Inlet	07/03/85	2330	9							1	14	16	12	19	24	14				100	22.1	18.5	0
074 (7)	10	Boddy Narrows (Isabel Pt.)	08/03/85	2100	10				1	2	4	10	15	13	10	16	18	8	3	1		101	21.4	18.5	9
071 (7)	11	1 mi below Neekas Inlet	10/03/85	0935	11							2	2	13	11	20	27	20	1			96	22.7	18.5	1
071 (7)	12	Neekas Bay	10/03/85	1045					Water haul																
071 (7)	13	Neekas Bay	10/03/85	1135					Water haul																
071 (7)	14	Neekas Bay	10/03/85	1455					Water haul																
071 (7)	15	Neekas Bay	10/03/85	1545					Water haul																
071 (7)	16	Outside Neekas Bay	10/03/85	1750	No length measurament - sample not representative																				

Table 15 (cont'd). Length frequency distribution of herring. ROE HERRING CHARTER SEINER "FISHER LASSIE II", STAT. AREAS 6-8, 1985.

Section (Area)	Set No.	Location	D/M/Y	Time	Biol. sample No.	Length Frequency (cm) 12-13	13-14	14-15	15-16	16-17	17-18	18-19	19-20	20-21	21-22	22-23	23-24	24-25	25-26	26-27	27-28	Sample size	Average length (cm)	Cutoff (cm)	% Below cutoff
071 (7)	17	Neekas Bay	10/03/85	1945	12							1	5	7	13	25	35	14				100	22.7	18.5	0
071 (7)	18	2 mi above Neekas Bay	11/03/85	1035	13				1			2	4	12	12	27	27	13	3			100	22.7	18.5	1
067 (6)	19	Kitasu Bay	14/03/85	1955	14					3	6	12	21	8	17	17	12	3	1			100	20.8	18.5	15
072 (7)	20	Berry Inlet	16/03/85	0905	15						5	10	15	19	16	12	17	4	2			100	21.2	18.5	8
067 (6)	21	East Higgins Passage	17/03/85	0740	16							2	7	11	15	38	22	5				100	22.2	18.5	0
067 (6)	22	East Higgins Passage (Outside Lagoon)	19/03/85	0615	17						6	7	19	16	17	25	8	2				100	21.0	18.5	8
067 (6)	23	In front of Higgins Lagoon	19/03/85	1840	18							1	10	8	17	41	19	3	1			100	22.1	18.5	0
071 (7)	24	East Price I.	20/03/85	0440	19					2	7	13	33	12	13	16	3	1				100	20.2	18.5	15
071 (7)	25	East Higgins Narrows	20/03/85	0630	20					1	5	13	13	16	20	21	7	3		1		100	20.9	18.5	10
071 (7)	26	Across from Pidwell Reef	20/03/85	0900		Water haul																			
071 (7)	27	3 1/2 mi in from Langford Cove	20/03/85	1000		Water haul																			
071 (7)	28	1 mi inside Langford Cove	20/03/85	1020	21						1	7	25	10	18	22	14	3				100	21.2	18.5	4
074 (7)	29	West Waskesiu Passage	20/03/85	1940	22					5	2	12	22	19	13	10	8	8	1			100	20.7	18.5	13
074 (7)	30	West Waskesiu Passage	20/03/85	2045		Water haul																			
074 (7)	31	East Waskesiu Passage	20/03/85	2105	23					1	2	7	17	15	13	12	23	8	2			100	21.6	18.5	4
074 (7)	32	Stryker Bay	21/03/85	2000	24				3	2	6	12	30	19	8	9	8	3				100	20.2	18.5	16

Table 15 (cont'd). Length frequency distribution of herring. ROE HERRING CHARTER SEINER "FISHER LASSIE II", STAT. AREAS 6-8, 1985.

Section (Area)	Set No.	Location	D/M/Y	Time	Biol. sample No.	Length Frequency (cm) 12-13	13-14	14-15	15-16	16-17	17-18	18-19	19-20	20-21	21-22	22-23	23-24	24-25	25-26	26-27	27-28	Sample size	Average length (cm)	Cutoff (cm)	% Below cutoff
074 (7)	33	Dundivan Inlet	22/03/85	2025	25				3	1	7	11	12	18	13	9	24	5	2			105	21.1	18.5	17
074 (7)	34	Near Idol Pt.	23/03/85	0450	26			1	1	3	12	13	13	14	9	12	10	8				96	20.5	18.5	26
071 (7)	35	Foote I., Spiller Ch.	23/03/85	2010	27						2	9	15	20	18	17	5	6				92	21.1	18.5	4
074 (7)	36	East Waskesiu Passage	24/03/85	1945					Water haul																
074 (7)	37	East Waskesiu Passage	24/03/85	2025	28					1	2	5	25	22	10	19	15	5	1			105	21.2	18.5	6
074 (7)	38	East Waskesiu Passage	25/03/85	0345	29			1		2	4	12	19	14	7	9	4	3				75	20.2	18.5	20
									Seine fishery samples																
071 (7)	1	Spiller Channel			1							4	6	13	5	9	8	5				50	21.6	18.5	4
071 (7)	2	Spiller Channel			2					1	5	11	20	17	12	27	10	5				108	21.0	18.5	11

Table 16. Seine set data and roe yield information. ROE HERRING CHARTER SEINER "FRANCISCAN NO.1", STAT. AREAS 6 and 7, 1985.

Section (Area)	Set No.	Location	D/M/Y	Time	Dep. (fa)	Tonnage: In loc.	Tonnage: Set on	Tonnage: Est. catch	Temp (°C)	Test No.	Sex Ratio: M No.	Sex Ratio: M %	Sex Ratio: F No.	Sex Ratio: F %	Roe Yield %: Vol.	Roe Yield %: Adj. vol.	Roe Grade (Pcs): #1	Roe Grade (Pcs): #2	Roe Grade (Pcs): #3	Spnd. out	Juv. or immat.
067 (6)	1	Between Jamieson And Marvin I.	06/03/85	1730	69	1500 / 2000	500 / 700			Water haul											
067 (6)	2	1/2 mi N. of Marvin I.	06/03/85	1925	20	1500 / 2000	700 / 800	100	6.9	1	54	51	52	49	2.0	2.0	7	13	32		1
										2	62	56	48	44	2.0	2.3	9	4	35		
074 (7)	3	Thompson Bay	08/03/85	2045		150	80	30	6.7	1	50	49	53	51	10.0	9.8	36	7	10		
										2	45	45	56	55	9.0	8.2	33	10	13		1
										3	51	49	54	51	9.5	9.3	34	8	12		1
074 (7)	4	Princess Alice I., Thompson Bay	09/03/85	0515		200 / 300	200 / 300	200 / 300	6.7	1	45	38	72	62	12.0	9.7	50	4	18		3
										2	49	43	64	57	9.0	7.9	36	9	19		1
										3	44	39	69	61	10.0	8.2	43	5	21		
074 (7)	5	West Waskesiu Passage	09/03/85	2020	20 / 35	750 / 1000	100	30 / 40	6.9	1	33	36	59	64	11.0	8.6	40	4	15		
										2	36	38	58	62	11.0	8.9	42	11	5		
										3	38	39	59	61	9.5	7.8	33	17	9		
071 (7)	6	Spiller Channel S. of Neekas I.	11/03/85	1010	20		50 / 100	30 lb	7.0	1	54	33	111	67	0.2	0.15	14	24	73		
										2	48	32	100	68	1.5	1.1	15	12	73		2
074 (7)	7	Dundivan Inlet	13/03/85	0520	50		300	100	6.7	1	34	40	50	60	8.0	6.7	30	2	18		1
										2	45	46	53	54	8.5	7.9	31	6	16		1
										3	42	40	62	60	13.0	10.8	47	7	8		1
										4	43	40	65	60	11.5	9.6	41	7	17		
										5	51	44	66	56	11.0	9.8	46	7	13		
074 (7)	8	Dundivan Inlet	14/03/85	0520	40	1200 / 1400	400 / 500	250	6.6	1	37	38	61	62	14.5	11.7	46	6	9		2
										2	43	41	63	59	13.0	11.0	45	6	12		2
										3	47	42	65	58	14.0	12.1	48	2	15	1	1
										4	64	56	50	44	10.0	11.4	37	2	11	1	1

Table 16 (cont'd). Seine set data and roe yield information. ROE HERRING CHARTER SEINER "FRANCISCAN NO. 1", STAT. AREAS 6 and 7, 1985.

Section (Area)	Set No.	Location	D/M/Y	Time	Dep. (fa)	Tonnage: In loc.	Tonnage: Set on	Tonnage: Est. catch	Temp (°C)	Test No.	Sex Ratio: M No.	Sex Ratio: M %	Sex Ratio: F No.	Sex Ratio: F %	Roe Yield %: Vol.	Roe Yield %: Adj. vol.	Roe Grade (Pcs): #1	Roe Grade (Pcs): #2	Roe Grade (Pcs): #3	Spnd. out	Juv. or immat.
074 (7)	9	Dundivan Inlet	14/03/85	0700		1200/1400			6.6		Water haul										
074 (7)	10	St. John Harbour	14/03/85	1030	35	300/400			6.7		Water haul										
074 (7)	11	Boddy Narrows	16/03/85	0520	35	150/200	150/200	100	6.6	1	58	41	83	59	12.0	10.2	50	8	25		12
										2	41	34	81	66	13.5	10.2	51	9	21		7
										3	56	43	74	57	9.5	8.3	46	5	23		9
										4	61	45	74	55	9.5	8.6	45	5	24		7
083 (8)	12	Kwakshua Channel	17/03/85	1930	90	4000	800	400	7.1	1	84	52	78	48	8.0	8.3	52	4	22		1
										2	66	42	93	58	9.0	7.8	60	12	21		3
										3	78	47	89	53	7.5	7.1	51	14	24		1
072 (7)	13	Powell Anchorage	19/03/85	1640	20/25	1000	300/400	75/100	6.8	1	51	48	56	52	15.0	14.4	54	2	0		
										2	44	44	55	56	15.0	13.4	50	3	2	1	
										3	42	42	57	58	15.0	12.9	56	1	0		1
074 (7)	14	Dundivan Inlet	20/03/85	1915	50	500/600	200/300	150	6.8	1	55	46	65	54	13.0	12.0	55	4	6		1
										2	55	47	61	53	14.0	13.2	56	1	4		5
										3	62	48	66	52	13.5	13.0	59	3	4	3	1
										4	58	46	68	54	13.0	12.0	57	1	10	3	
067 (6)	15	East Higgins Pass	21/03/85	1635	35	700/800	100	50	6.8	1	75	56	59	44	10.0	11.4	45	1	13		
										2	68	49	70	51	11.0	10.8	56	4	10	1	1
										3	74	53	65	47	10.0	10.6	50	7	8		
067 (6)	16	Parsons Achorage	23/03/85	0438	24	600	400	200 6	6.6	1	60	51	58	49	10.0	10.2	44	2	12		
										2	56	50	57	50	11.0	11.0	50	3	4	2	1
										3	61	52	56	48	12.0	12.5	50	0	6		

Table 16 (cont'd). Seine set data and roe yield information. ROE HERRING CHARTER SEINER "FRANCISCAN NO. 1", STAT. AREAS 6 and 7, 1985.

Section (Area)	Set No.	Location	D/M/Y	Time	Dep. (fa)	Tonnage			Temp (°C)	Test No.	Sex Ratio				Roe Yield %		Roe Grade (Pcs)			Spnd. out	Juv. or immat.
						In loc.	Set on	Est. catch			M		F		Vol.	Adj. vol.	#1	#2	#3		
											No.	%	No.	%							
067 (6)	17	Kitasu Bay (Marvin I.)	24/03/85	0450	30	600	600	200	6.7	1	56	53	50	47	10.0	10.6	43	0	7	1	
										2	64	54	55	46	11.0	12.0	48	1	6		2
										3	58	48	62	52	10.0	9.6	53	2	7	1	
067 (6)	18	East Higgins Pass	25/03/85	0500	35	700/800	500/600	150	6.5	1	77	59	54	41	9.0	11.0	43	2	9		
										2	66	47	73	53	11.0	10.4	63	1	9		
										3	64	47	71	53	12.0	11.3	58	5	8		
										4	59	45	71	55	11.0	10.0	58	8	5		
074 (7)	19[a]	Dundivan Inlet	25/03/85	1640		500	500	200	6.5	1	43	48	46	52	13.0	12.5	43	0	3		
										2	52	49	54	51	13.0	12.7	49	3	2		
										3	67	56	52	44	12.5	14.2	50	0	2		
										4	49	49	51	51	13.0	12.7	49	0	2		2
										5	41	42	56	58	15.0	12.9	53	1	2		2
074 (7)	20	Dundivan Inlet	26/03/85	0420	35	800	50/60	25	6.5	1	92	60	61	40	7.0	8.8	42	10	9		11
										2	72	51	68	49	12.0	12.2	54	9	5		4
										3	64	50	65	50	12.0	12.0	59	2	4		8
067 (6)		Kitasu Bay Spn. on kelp, Fishing vessel "Freelander"	23/03/85	1800					6.8	1	66	52	61	48	11.0	11.5	52	3	6		
067 (6)		East Higgins Spn. on kelp, Fishing vessel "Sally J. Rogers"	22/03/85	1600	30	300/400	150	150	No test due to decomposition												
067 (6)		East Higgins	22/03/85			700/800				1	68	54	59	46	10.0	10.9	49	3	7		
										2	68	54	59	46	11.0	12.0	50	4	5		
										3	80	58	58	42	10.0	11.9	46	4	8		
067 (6)		East Higgins	26/03/85	1700		75/100	25			1	98	52	89	48	8.5	8.9	51	11	27		1

[a] Charter payment herring.

Table 17. Length frequency distribution of herring. ROE HERRING CHARTER SEINER "FRANCISCAN NO. I", STAT. AREAS 6 and 7, 1985.

Section (Area)	Set No.	Location	D/M/Y	Time	Biol. sample No.	Length Frequency (cm) 12 13	13 14	14 15	15 16	16 17	17 18	18 19	19 20	20 21	21 22	22 23	23 24	24 25	25 26	26 27	27 28	Sample size	Average length (cm)	Cutoff (cm)	% Below cutoff
067 (6)	1	Between Jamieson And Marvin I.	06/03/85	1730				Water haul																	
067 (6)	2	1/2 mi N. of Marvin I.	06/03/85	1925	1					1	2	5	12	14	27	27	10	2				100	21.4	18.5	5
074 (7)	3	Thompson Bay	08/03/85	2045	2						6	5	16	22	12	19	13	6	1			100	21.2	18.5	8
074 (7)	4	Princess Alice I., Thompson Bay	09/03/85	0515	3						3	14	20	21	15	12	13	2				100	20.8	18.5	8
074 (7)	5	West Waskesiu Passage	09/03/85	2020	4					1		7	5	4	7	36	25	14	1			100	22.4	18.5	2
071 (7)	6	Spiller Channel S. of Neekas I.	11/03/85	1010	5				1	5	7	15	29	24	13	1	4					99	19.7	18.5	21
074 (7)	7	Dundivan Inlet	13/03/85	0520	6						2	11	15	14	21	15	17	6	2			103	21.4	18.5	7
074 (7)	8	Dundivan Inlet	14/03/85	0520	7				2	2		1	16	13	21	31	13	2				101	21.4	18.5	5
074 (7)	9	Dundivan Inlet	14/03/85	0700				Water haul																	
074 (7)	10	St. John Harbour	14/03/85	1030				Water haul																	
074 (7)	11	Boddy Narrows	16/03/85	0520	8				3	9	14	22	19	4	12	9	6	3				101	19.5	18.5	34
083 (8)	12	Kwakshua Channel	17/03/85	1930	9				1	5	13	31	17	14	13	3	1					98	19.3	18.5	38
072 (7)	13	Powell Anchorage	19/03/85	1640	10						1	5	12	10	20	18	20	14				100	22.0	18.5	3
074 (7)	14	Dundivan Inlet	20/03/85	1915	11					2	4	16	18	9	14	14	19	3	1			100	21.0	18.5	14
067 (6)	15	East Higgins Pass	21/03/85	1635	12					2	12	9	33	14	16	13	1					100	20.0	18.5	18
067 (6)	16	Parsons Achorage	23/03/85	0438	13						3	7	9	15	22	27	15	2				100	21.5	18.5	5

Table 17 (cont'd). Length frequency distribution of herring. ROE HERRING CHARTER SEINER "FRANCISCAN NO. I", STAT. AREAS 6 and 7, 1985.

Section (Area)	Set No.	Location	D/M/Y	Time	Biol. sample No.	Length Frequency (cm) 12-13	13-14	14-15	15-16	16-17	17-18	18-19	19-20	20-21	21-22	22-23	23-24	24-25	25-26	26-27	27-28	Sample size	Average length (cm)	Cutoff (cm)	% Below cutoff
067 (6)	17	Kitasu Bay (Marvin I.)	24/03/85	0450	16					1	5	4	9	16	13	31	16	4				99	21.5	18.5	6
067 (6)	18	East Higgins Pass	25/03/85	0500	17						4	16	22	13	21	16	5	2				99	20.6	18.5	10
074 (7)	19	Dundivan Inlet	25/03/85	1640	18					3	4	10	24	16	14	24	18	5	1			119	21.1	18.5	13
074 (7)	20	Dundivan Inlet	26/03/85	0420	19					3	7	24	19	14	13	9	10					99	20.1	18.5	20
067 (6)		Kitasu Bay	23/03/85	1800	14				1	1	3	12	14	19	15	18	15	4				102	21.1	18.5	11
		Spn. on kelp, Fishing vessel "Freelander"																							
067 (6)		East Higgins	22/03/85	1600	15						1	9	16	18	16	28	8	3				99	21.2	18.5	6
		Spn. on kelp, Fishing vessel "Sally J. Rogers"																							
067 (6)		East Higgins	22/03/85						1	4	4	6	21	10	14	24	10	3	1			98	20.9	18.5	11
067 (6)		East Higgins	26/03/85	1700	20				1	11	22	31	22	8	2	2						98	18.6	18.5	48

Table 18. Seine set data and roe yield information. ROE HERRING CHARTER SEINER "WESTVIEW NO. I", STAT. AREAS 13-18, 1985.

Section (Area)	Set No.	Location	D/M/Y	Time	Dep. (fa)	Tonnage			Temp (°C)	Test No.	Sex Ratio				Roe Yield %		Roe Grade (Pcs)			Spnd. out	Juv. or immat.
						In loc.	Set on	Est. catch			M		F		Wt.	Adj. wt.	#1	#2	#3		
											No.	%	No.	%							
172 (17)	1	1 mi directly off Icarus Pt.	20/02/85	1843	40	3000		500	7.5	1	69	56	54	44	0	-	0	0	54		45
143 (14)	2	1 mi off Bowser Pt.	21/02/85	1845		1000		7/8	8.1	1	51	58	37	42	0	-	1	3	33		1
142 (14)	3	3/4 mi SW. of Repulse Pt.	21/02/85	2152	30	300	30	7	7.4	1	36	41	52	59	0	-	0	19	33		7
152 (15)	4	1/2 mi SE. of the Hulks	22/02/85	1415		1000/1200		0	Water haul												
152 (15)	5	1/4 mi off Hulks-Powell River	22/02/85	1558	30	1000	100	8	7.4	1	63	59	44	41	0	-	0	0	44		13
152 (15)	6	1/4 mi directly off Lund	22/02/85	1947	50				7.4	Water haul											
152 (15)	7	1/4 mi SW. Dinner Rock	23/02/85	0540		1500		5	7.4	1	58	51	55	49	0	-	1	1	53		18
143 (14)	8	1/2 mi off Bowser Pt.	23/02/85	1850				<1/2	8.1	Water haul											
142 (14)	9	1 1/4 mi S. of Chrome I.	23/02/85	2003	12			2	8.0	1	78	53	68	47	0	-	2		66		12
142 (14)	10	1/2 mi S. of Norris Rocks	24/02/85	0520			600	8	8.0	1	44	46	52	54	0	-	2	1	49		1
152 (15)	11	1/2 mi W.SW. of Mill Stack	25/02/85	0529	25		70	5	7.6	1	57	48	61	52	0	-	0	7	54		2

Table 18 (cont'd). Seine set data and roe yield information. ROE HERRING CHARTER SEINER "WESTVIEW NO. I", STAT. AREAS 13-18, 1985.

Section (Area)	Set No.	Location	D/M/Y	Time	Dep. (fa)	Tonnage: In loc.	Tonnage: Set on	Tonnage: Est. catch	Temp (°C)	Test No.	Sex Ratio: M No.	Sex Ratio: M %	Sex Ratio: F No.	Sex Ratio: F %	Roe Yield %: Wt.	Roe Yield %: Adj. wt.	Roe Grade (Pcs): #1	Roe Grade (Pcs): #2	Roe Grade (Pcs): #3	Spnd. out	Juv. or immat.
162 (16)	12	1/4 mi S. of Grief Pt.	25/02/85	1544	70		125	0	7.8		Water haul										
162 (16)	13	1/2 mi S. of Grief Pt.	25/02/85	1632	60		50	0	7.9		Water haul										
152 (15)	14	1/2 mi SE. of Beach Gardens Marina	25/02/85	1737	40		125	0	8.0		Water haul										
142 (14)	15	Denman I., Baynes Sd.	26/02/85	1933	25		30	5	7.6		Juvenile herring										
142 (14)	16	3/4 mi SE. of Ship Peninsula	26/02/85	2045	30	2000	300	30	8.1	1	58	53	51	47	9.1	9.7	41	4	6		
										2	61	55	49	45	5.8	6.4	34	6	9		
										3	64	62	40	38	6.4	8.4	34	4	2		
										4	62	55	51	45	5.9	6.6	33	7	11		
										5	50	56	39	44	8.2	9.3	21	9	9		
142 (14)	17	1/2 mi directly off Ship Penn.	27/02/85	0520	30	2000	70	25	7.2	1	54	46	64	54	7.7	7.1	44	6	14		
										2	59	50	58	50	8.4	8.4	46	3	9		4
										3	67	56	52	44	7.8	8.9	43	4	5		4
142 (14)	18	Lambert Ch. - Fords Cove	27/02/85	1820	40	2000	250	50	7.1	1	52	50	53	50	5.6	5.6	26	7	20		2
										2	49	49	52	51	5.7	5.6	35	4	13		2
										3	48	50	48	50	8.8	8.8	31	7	10	1	1
142 (14)	19	1/2 mi off Komas Bluff	27/02/85	2050	18	5000+	4/500	10	7.7	1	58	47	66	53	5.5	5.2	29	7	30		2
										2	51	45	62	55	5.9	5.4	28	4	30		
										3	52	48	56	52	4.6	4.4	22	11	23		1
142 (14)	20	Repulse Pt.	28/02/85	0510	30	3500	300	25	7.7	1	59	53	52	47	5.6	6.0	35	4	13		1
										2	46	43	62	57	9.3	8.2	51	5	6		1
										3	68	65	37	35	6.2	8.9	29	1	7		2

Table 18 (cont'd). Seine set data and roe yield information. ROE HERRING CHARTER SEINER "WESTVIEW NO. I", STAT. AREAS 13-18, 1985.

Section (Area)	Set No.	Location	D/M/Y	Time	Dep. (fa)	Tonnage: In loc.	Tonnage: Set on	Tonnage: Est. catch	Temp (°C)	Test No.	Sex Ratio: M No.	Sex Ratio: M %	Sex Ratio: F No.	Sex Ratio: F %	Roe Yield %: Wt.	Roe Yield %: Adj. wt.	Roe Grade (Pcs): #1	#2	#3	Spnd. out	Juv. or immat.
152 (15)	21	1/4 mi NW. of Mace Pt.	28/02/85	1850	20	1800+	250	50	7.8	1	50	44	63	56	7.1	6.3	32	5	26		5
										2	60	56	47	44	4.1	4.7	17	6	24		3
										3	57	53	50	47	5.7	6.1	28	3	19		6
137 (13)	22	Breton I. SW.	01/03/85	2240	50	1000	125	10	7.7	1	77	60	51	40	2.8	3.5	18	2	31		
										2	80	62	50	38	0.9	1.2	6	4	40		
138 (13)	23	Smelt Bay	02/03/85	0818	30/40	500	400	0	7.6	Water haul											
152 (15)	24	3/4 mi S. Sliammon	02/03/85	1240	30	Water haul															
162 (6)	25	Westview	02/03/85	1630	35	800	100	100	8.2	1	61	53	55	47	6.9	7.3	35	5	15		
										2	56	48	62	52	4.8	4.6	27	9	26		
										3	52	44	66	56	8.1	7.2	44	2	20		3
152 (15)	26	1/4 mi E. Atrevida	02/03/85	1925	15	500	500	100	8.5	1	61	52	57	48	4.0	4.2	21	2	34		7
										2	72	59	51	41	3.7	4.5	21	3	27		7
										3	78	63	46	37	4.2	5.7	22	2	22		6
162 (16)	27	Westview	03/03/85	0800	30	1500	400	75	8.2	1	59	55	48	45	7.8	8.7	36	3	9		1
										2	65	56	51	44	7.8	8.9	41	2	8		
										3	55	48	60	52	7.6	7.3	41	2	17		1
										4	62	57	47	43	6.1	7.1	29	3	15		2
										5	48	41	68	59	8.7	7.4	40	6	22		1
162 (16)	28	1/4 mi W. Myrtle Pt.	03/03/85	1010			150		7.7	Water haul											
162 (16)	29	Myrtle Pt.	03/03/85	1055	22		75		7.5	Water haul											

Table 18 (cont'd). Seine set data and roe yield information. ROE HERRING CHARTER SEINER "WESTVIEW NO. I", STAT. AREAS 13-18, 1985.

Section (Area)	Set No.	Location	D/M/Y	Time	Dep. (fa)	Tonnage: In loc.	Tonnage: Set on	Tonnage: Est. catch	Temp (°C)	Test No.	Sex Ratio: M No.	Sex Ratio: M %	Sex Ratio: F No.	Sex Ratio: F %	Roe Yield %: Wt.	Roe Yield %: Adj. wt.	Roe Grade (Pcs): #1	Roe Grade (Pcs): #2	Roe Grade (Pcs): #3	Spnd. out	Juv. or immat.
152 (15)	30	3/4 mi W. of Mill	04/03/85	0005	27	200	70	1	7.7	1	52	43	70	57	6.5	5.7	39	1	30		4
										2	64	50	63	50	5.2	5.2	42		21		9
										3	67	55	56	45	5.7	6.3	34	8	14		4
162 (16)	31	1/3 mi off Beach SE. of Myrtle Rocks	04/03/85	0813	60	3000	250	60	7.8	1	62	54	52	46	7.9	8.6	40	2	10		3
										2	65	54	55	46	7.8	8.5	38	2	15		
										3	72	63	42	37	6.7	9.1	31	3	8		1
										4	58	54	50	46	8.1	8.8	41	0	9		2
										5	63	53	57	47	7.7	8.2	39	4	14		1
152 (15)	32	Savary	04/03/85	1900	30	1200	450	500 lb	8.4	1	53	43	71	57	5.2	4.6	34	2	35		35
										2	60	49	62	51	6.7	6.6	37	4	21		14
										3	70	56	55	44	5.2	5.9	33	2	20		12
152 (15)	33	1/8 mi N. Mace Pt.	05/03/85	1930	20	1200	100	10	7.8	1	61	50	61	50	5.4	5.4	33	1	27		14
										2	63	51	60	49	4.7	4.8	29	1	30		20
										3	47	42	65	58	6.3	5.4	36	4	25		27
152 (15)	34	1/4 mi W. of Dinner Rock	06/03/85	0645	40		70	6	7.8	1	60	53	54	47	8.0	8.5	46	2	6		3
										2	56	47	62	53	10.3	9.7	57	1	4		
										3	64	51	62	49	8.4	8.6	50	2	10		3
										4	63	53	56	47	8.0	8.5	42	1	13		2
										5	69	62	43	38	7.4	9.7	36	3	4		1
152 (15)	35	1/8 mi off Beach W. of Hurtado Pt.	06/03/85	0810	60+	1000	300	0	7.7		Water haul										
152 (15)	36	NE. Mace Pt.	06/03/85	1200			350		8.1		Water haul										
152 (15)	37	1/8 mi N. Savary I. midpoint	06/03/85	1630	30	3000	200	40	8.2	1	60	56	48	44	8.7	9.9	43	0	5		3
										2	51	47	58	53	9.8	9.2	52	0	6		2
										3	61	55	49	45	7.6	8.4	37	4	8		1
										4	52	50	52	50	8.8	8.8	47	1	4		2
										5	46	45	57	55	10.7	9.7	50	4	3		4

Table 18 (cont'd). Seine set data and roe yield information. ROE HERRING CHARTER SEINER "WESTVIEW NO. I", STAT. AREAS 13-18, 1985.

Section (Area)	Set No.	Location	D/M/Y	Time	Dep. (fa)	Tonnage: In loc.	Tonnage: Set on	Tonnage: Est. catch	Temp (°C)	Test No.	Sex Ratio: M No.	Sex Ratio: M %	Sex Ratio: F No.	Sex Ratio: F %	Roe Yield %: Wt.	Roe Yield %: Adj. wt.	Roe Grade (Pcs): #1	#2	#3	Spnd. out	Juv. or immat.
152 (15)	38	Entrance Thulin Passage	07/03/85	0540	55		350		7.8		Water haul										
152 (15)	39	1/2 mi S. Keefer R.K.	07/03/85	0725	30	300	100	500 lb	7.9	1	52	47	59	53	6.3	5.9	36	0	23		7
										2	59	54	50	46	4.7	5.1	28	1	21		8
137 (13)	40	1/8 mi W. of Breton I.	07/03/85	2030	30	1000	450	500 lb	7.5	1	86	61	56	39	2.7	3.5	22	6	28		46
138 (13)	41	3/8 mi W. of Smelt Bay	08/03/85	0540	55	600	450	70	7.6	1	80	57	60	43	6.1	7.1	44	3	13		2
										2	83	57	63	43	4.9	5.7	35	8	20		5
										3	79	58	57	42	4.7	5.6	30	10	17		4
152 (15)	42	3/8 mi W. of Atrevida Reef	09/03/85	0530	30	200	6	6	7.7	1	56	41	79	59	0.9	0.8	9	26	44	18	1
173 (17)	43	1 mi SE. Round I., 1 mi NE. of Boat Harbour	09/03/85	2030	27	4500	1500	50	7.6	1	50	51	48	49	10.1	10.3	42	1	5		
										2	54	51	51	49	10.3	10.5	45	2	4		
										3	54	53	47	47	10.4	11.1	41	1	5		
										4	52	52	48	48	11.0	11.5	43	2	3		
										5	56	59	39	41	8.8	10.7	36	0	3		
173 (17)	44	1/2 mi N. Yellow Pt.	10/03/85	2020	30		1150	70	7.6	1	49	52	45	48	10.0	10.4	40	1	4	1	
										2	55	57	42	43	9.6	11.2	37	0	5		
										3	55	50	54	50	9.0	9.0	43	4	7		
173 (17)	45	1 mi SE. Boat Harbour	10/03/85	2345	45	4000	200	100	7.7	1	58	56	45	44	10.2	11.6	39	0	6		
										2	58	59	40	41	8.5	10.4	32	1	7		
										3	63	59	44	41	8.5	10.4	37	0	7		
										4	50	49	53	51	10.3	10.1	42	4	7		1
173 (17)	46	Kuleet Bay	11/03/85	0200	40	3000		40	7.6		Juvenile herring - no samples taken										

Table 18 (cont'd). Seine set data and roe yield information. ROE HERRING CHARTER SEINER "WESTVIEW NO. I", STAT. AREAS 13-18, 1985.

Section (Area)	Set No.	Location	D/M/Y	Time	Dep. (fa)	Tonnage: In loc.	Tonnage: Set on	Tonnage: Est. catch	Temp (°C)	Test No.	Sex Ratio: M No.	Sex Ratio: M %	Sex Ratio: F No.	Sex Ratio: F %	Roe Yield %: Wt.	Roe Yield %: Adj. wt.	Roe Grade (Pcs): #1	#2	#3	Spnd. out	Juv. or immat.
173 (17)	47	1/2 mi "S" Trees I.	11/03/85	1142	25	1000	550	40	7.9	1	46	48	50	52	11.0	10.6	43	2	5		
										2	63	62	39	38	9.4	12.4	36	1	2		
										3	56	52	52	48	11.6	12.1	48	0	4		1
173 (17)	48[a]	SE. Danger Reef	11/03/85	1915	33		600		7.7	1	51	49	53	51	12.1	11.9	50	0	3		
										2	64	58	46	42	9.6	11.4	43	1	2		1
										3	62	54	53	46	8.4	9.1	40	2	11		
										4	44	48	48	52	13.2	12.7	47	1	0	1	
										5	60	65	33	35	9.2	13.1	31	0	2		1
										6	61	53	55	47	10.5	11.2	48	1	6		2
										7	69	61	44	39	7.5	9.6	34	1	9		1
										8	66	61	43	39	9.6	12.3	39	0	4		
173 (17)	49	1 mi E. of Boat Harbour	12/03/85	0905					7.5		Water haul										
171 (17)	50	NW. of Row Boat Pt.	12/03/85	1550	60				7.8		Water haul										
171 (17)	51	1/8 mi NW. Gaviola I.	12/03/85	1720	40				7.8		Water haul										
173 (17)	52	7/8 mi NW. Thrashen Rk.	13/03/85	1630	65+	300	150	30	7.9		Herring spawned out - released										
183 (18)	53	1/4 mi E. of Fane I.	14/03/85	2030				1	7.9		Juvenile and spawned out herring - released										
183 (18)	54	3/4 mi E.SE. Edith Pt.	16/03/85	0340	28	500	250	70	7.9		Herring spawned out - released										
171 (17)	55	1/8 mi W. Gaviola I.	16/03/85	2030	55	110	110	110	8.2		Herring spawned out - released										

[a] Charter payment herring.

Table 19. Length frequency distribution of herring. ROE HERRING CHARTER SEINER "WESTVIEW NO. I", STAT. AREAS 13-18, 1985.

Section (Area)	Set No.	Location	D/M/Y	Time	Biol. sample No.	Length Frequency (cm) 12-13	13-14	14-15	15-16	16-17	17-18	18-19	19-20	20-21	21-22	22-23	23-24	24-25	25-26	26-27	27-28	Sample size	Average length (cm)	Cutoff (cm)	% Below cutoff
172 (17)	1	1 mi directly off Icarus Pt.	20/02/85	1843	1				7	19	19	23	18	11	2	1						100	18.2	19.0	68
143 (14)	2	1 mi off Bowser Pt.	21/02/85	1845	2							5	13	13	25	20	19	4	1			100	21.7	19.0	5
142 (14)	3	3/4 mi SW. of Repulse Pt.	21/02/85	2152	3				2	1	4	8	15	21	29	17	2	1				100	20.7	19.0	15
152 (15)	4	1/2 mi SE. of the Hulks	22/02/85	1415		Water haul																			
152 (15)	5	1/4 mi off Hulks-Powell River	22/02/85	1558	4				9	8	11	18	22	19	9	4						100	19.0	19.0	46
152 (15)	6	1/4 mi directly off Lund	22/02/85	1947	5	Water haul																			
152 (15)	7	1/4 mi SW. Dinner Rock	23/02/85	0540	6				3	17	15	26	21	12	4	2						100	18.6	19.0	61
143 (14)	8	1/2 mi off Bowser Pt.	23/02/85	1850		Water haul																			
142 (14)	9	1 1/4 mi S. of Chrome I.	23/02/85	2003	7				1	3	24	22	30	11	8							99	17.9	19.0	81
142 (14)	10	1/2 mi S. of Norris Rocks	24/02/85	0520	8						2	8	8	14	19	23	16	7	3			100	20.8	19.0	18
152 (15)	11	1/2 mi W.SW. of Mill Stack	25/02/85	0529	9					5	6	14	22	21	18	10	3	1				100	19.1	19.0	47
162 (16)	12	1/4 mi S. of Grief Pt.	25/02/85	1544		Water haul																			
162 (16)	13	1/2 mi S. of Grief Pt.	25/02/85	1632		Water haul																			
152 (15)	14	1/2 mi SE. of Beach Gardens Marina	25/02/85	1737		Water haul																			
142 (14)	15	Denman I., Bayner Sd.	26/02/85	1933	10		4	46	42	7	1	Juvenile herring										100	15.1	19.0	100
142 (14)	16	3/4 mi SE. of Ship Peninsula	26/02/85	2045	11					7	16	20	25	18	10	4						100	19.3	19.0	43
142 (14)	17	1/2 mi directly off Ship Peninsula	27/02/85	0520	12				1	5	17	27	25	12	10	3						100	19.1	19.0	50

Table 19 (cont'd). Length frequency distribution of herring. ROE HERRING CHARTER SEINER "WESTVIEW NO. I", STAT. AREAS 13-18, 1985.

Section (Area)	Set No.	Location	D/M/Y	Time	Biol. sample No.	Length Frequency (cm) 12 13	13 14	14 15	15 16	16 17	17 18	18 19	19 20	20 21	21 22	22 23	23 24	24 25	25 26	26 27	27 28	Sample size	Average length (cm)	Cutoff (cm)	% Below cutoff
142 (14)	18	Lambert Ch. - Fords Cove	27/02/85	1820	13				2	9	16	20	19	19	10	4	2					101	19.2	19.0	47
142 (14)	19	1/2 mi off Komas Bluff	27/02/85	2050	14					12	17	23	23	11	9	3	2					100	19.1	19.0	52
142 (14)	20	Repulse Pt.	28/02/85	0510	15				2	4	12	12	19	27	12	7	3	1	1			100	19.9	19.0	30
152 (15)	21	1/4 mi NW. of Mace Pt.	28/02/85	1850	16					7	9	22	27	18	12	2	2	1				100	19.5	19.0	38
137 (13)	22	Breton I. SW.	01/03/85	2240	17				2	2	17	28	25	16	9	0	1					100	19.1	19.0	49
138 (13)	12	Smelt Bay	02/03/85	0818					Water haul																
152 (15)	24	3/4 mi S. Stiammon	02/03/85	1240					Water haul																
162 (16)	25	Westview	02/03/85	1630	18					1	2	11	27	29	18	10	0	1	1			100	20.4	19.0	14
152 (15)	26	1/4 mi E. Atrevida	02/03/85	1925	19				9	12	20	23	21	6	4	3	1					99	18.2	19.0	65
162 (16)	27	Westview	03/03/85	0800	20				2	6	14	22	26	16	9	4						99	19.2	19.0	44
162 (16)	28	1/4 mi W. Myrtle Pt.	03/03/85	1010					Water haul																
162 (16)	29	Myrtle Pt.	03/03/85	1055					Water haul																
152 (15)	30	3/4 mi W. of Mill	04/03/85	0005	21			2	8	9	15	17	25	14	7	3						100	18.7	19.0	51
162 (16)	31	1/3 mi off Beach SE. of Myrtle Rocks	04/03/85	0813	22						3	19	29	27	16	4	1					99	20.0	19.0	22
152 (15)	32	Savary	04/03/85	1900	23			1	6	21	9	28	22	7	6							100	18.3	19.0	65
152 (15)	33	1/8 mi N. Mace Pt.	05/03/85	1930	24				8	13	19	20	14	17	7	0	1					99	18.6	19.0	61
152 (15)	34	1/4 mi W. of Dinner Rock	06/03/85	0645	25					3	12	14	26	25	14	4	2					100	19.8	19.0	29

Table 19 (cont'd). Length frequency distribution of herring. ROE HERRING CHARTER SEINER "WESTVIEW NO. I", STAT. AREAS 13-18, 1985.

Section (Area)	Set No.	Location	D/M/Y	Time	Biol. sample No.	Length Frequency (cm) 12-13	13-14	14-15	15-16	16-17	17-18	18-19	19-20	20-21	21-22	22-23	23-24	24-25	25-26	26-27	27-28	Sample size	Average length (cm)	Cutoff (cm)	% Below cutoff
152 (15)	35	1/8 mi off Beach W. of Hurtado Pt.	06/03/85	0810		Water haul																			
152 (15)	36	NE. Mace Pt.	06/03/85	1200		Water haul																			
152 (15)	37	1/8 mi N. Savary I. midpoint	06/03/85	1630	26					1	5	13	26	34	13	5	2	1				100	20.1	19.0	19
152 (15)	38	Entrance Thulin Passage	07/03/85	0540		Water haul																			
152 (15)	39	1/2 mi S. Keefer R.K.	07/03/85	0725	27					2	22	34	26	12	4							100	18.9	19.0	58
137 (13)	40	1/8 mi W. of Breton I.	07/03/85	2030	28		1	9	19	29	23	14	4	1								100	16.8	19.0	95
138 (13)	41	3/8 mi W. of Smelt Bay	08/03/85	0540	29			2	2	12	28	34	16	5	1							100	18.1	19.0	78
152 (15)	42	3/8 mi W. of Atrevida Reef	09/03/85	0530	30				13	19	24	24	13	6	0	1						100	17.8	19.0	80
173 (17)	43	1 mi SE. Round I., 1 mi NE. of Boat Harbour	09/03/85	2030	31				4	3	14	22	9	10	14	10	9	4	1	1		101	20.1	19.0	43
173 (17)	44	1/2 mi N. Yellow Pt.	10/03/85	2020	32						7	14	18	25	13	10	8	3	1			99	20.6	19.0	21
173 (17)	45	1 mi SE. Boat Harbour	10/03/85	2345	33				1	3	6	21	19	21	12	9	2	6	4	1		105	19.4	19.0	48
173 (17)	46	Kuleet Bay	11/03/85	0200		Juvenile herring - no sample taken																			
173 (17)	47	1/2 mi "S" Trees I.	11/03/85	1142	34					2	14	24	32	15	18	9	5	2	1			122	19.0	19.0	59
173 (17)	48	SE. Danger Reef	11/03/85	1915	35	Released at mid-point while pumping																			
173 (17)	48	SE. Danger Reef	11/02/85	1915	35				1	2	8	16	19	13	13	9	5	8	5	1		100	19.7	19.0	46
173 (17)	49	1 mi E. of Boat Harbour	12/03/85	0905	35																				

Table 19 (cont'd). Length frequency distribution of herring. ROE HERRING CHARTER SEINER "WESTVIEW NO. I", STAT. AREAS 13-18, 1985.

Section (Area)	Set No.	Location	D/M/Y	Time	Biol. sample No.	Length Frequency (cm) 12-13	13-14	14-15	15-16	16-17	17-18	18-19	19-20	20-21	21-22	22-23	23-24	24-25	25-26	26-27	27-28	Sample size	Average length (cm)	Cutoff (cm)	% Below cutoff
171 (17)	50	NW. of Row Boat Point	12/03/85	1550		Water haul																			
171 (17)	51	1/8 mi NW. Gaviola I.	12/03/85	1720		Water haul																			
173 (17)	52	7/8 mi NW. of Thrashen Rk.	13/03/85	1630		Herring spawned out - released																			
183 (18)	53	1/4 mi E. of Fane I.	14/03/85	2030		Juvenile & spawned out herring - released																			
183 (18)	54	3/4 mi E.SE. Edith Pt.	16/03/85	0340	37				2	0	7	13	31	27	11	5	3	1				100	20.0	19.0	22
171 (17)	55	1/8 mi W. Gaviola I.	16/03/85	2030	38						4	11	24	28	15	7	10	1				100	20.6	19.0	15

Table 20. Seine set data and roe yield information. ROE HERRING CHARTER SEINER "NITA MARIA", STAT. AREAS 14 and 17, 1985.

Section (Area)	Set No.	Location	D/M/Y	Time	Dep. (fa)	Tonnage: In loc.	Tonnage: Set on	Tonnage: Est. catch	Temp (°C)	Test No.	Sex Ratio: M No.	Sex Ratio: M %	Sex Ratio: F No.	Sex Ratio: F %	Roe Yield %: Wt.	Roe Yield %: Adj. wt.	Roe Grade (Pcs): #1	Roe Grade (Pcs): #2	Roe Grade (Pcs): #3	Spnd. out	Juv. or immat.
172 (17)	1	Northumberland Channel	20/02/85	1810	60	800/1000	100	100	7.0	1	69	57	52	43	0	-	0	0	52		49
171 (17)	2	Porlier Pass (Cardale Pt.)	21/02/85	0630	30			75	6.5	1	40	49	42	51	0	-	0	0	42		5
171 (17)	3	Wallace I.	21/02/85	1915				40/50	6.8	1	81	64	46	36	0	-	0	0	46		19
171 (17)	4	Parker I.	22/02/85	1306	30		4		6.7	Water haul											
171 (17)	5	2 mi SE. of Porlier Pass	23/02/85	0545	30	3000		100	6.9	1	37	42	51	58	0	-	0	0	51		2
171 (17)	6	Off Pirates Cove	23/02/85	1050	32	100	10		6.8	Water haul											
172 (17)	7	Northumberland Channel	24/02/85	0530	60	1500/2000		50	7.4	1	58	54	50	46	0	-	1	1	48		7
142 (14)	8	Norris Rock	25/02/85	1840	50		150	125	7.0	1	47	49	48	51	5.2	5.1	20	7	21		
										2	55	52	50	48	2.7	2.8	15	14	21		
										3	48	49	49	51	2.7	2.6	11	16	22		1
142 (14)	9	Lambert Chan.	25/02/85	2100	40	3000/4000	30	7	7.0	1	52	45	64	55	2.1	1.9	10	10	44		18
										2	47	39	74	61	2.6	2.1	13	13	48		12
142 (14)	10	Chrome I.	26/02/85	0550		500	50	5	7.0	1	40	45	49	55	1.3	1.2	6	14	29		13
										2	45	48	49	52	1.7	1.6	10	8	31		8
142 (14)	11	Lambert Chan.	26/02/85	0830	40	500	200/300		7.0	Water haul											

Table 20 (cont'd). Seine set data and roe yield information. ROE HERRING CHARTER SEINER "NITA MARIA", STAT. AREAS 14 and 17, 1985.

Section (Area)	Set No.	Location	D/M/Y	Time	Dep. (fa)	Tonnage: In loc.	Tonnage: Set on	Tonnage: Est. catch	Temp (°C)	Test No.	Sex Ratio: M No.	Sex Ratio: M %	Sex Ratio: F No.	Sex Ratio: F %	Roe Yield %: Wt.	Roe Yield %: Adj. wt.	Roe Grade (Pcs): #1	Roe Grade (Pcs): #2	Roe Grade (Pcs): #3	Spnd. out	Juv. or immat.
142 (14)	12	1 1/2 mi NW. Collishaw Pt.	26/02/85	1520	50	500	200		7.1		Water haul										
142 (14)	13	Lambert Chan., 1 mi NW. Collishaw Pt.	26/02/85	1745	35	500	250	100	7.1	1	53	46	63	54	7.5	6.9	35	6	22		
										2	55	43	73	57	4.3	3.8	24	13	36		1
										3	61	55	49	45	3.2	3.6	15	16	18		1
142 (14)	14	Lambert Chan.	26/02/85	2045		3000 / 4000	50	25	6.8	1	51	46	59	54	2.3	2.1	12	6	41		12
										2	52	45	64	55	2.2	2.0	11	12	41		10
142 (14)	15	3/4 mi off Phipps Pt., Lambert Chan.	27/02/85	0530	25		50	5	6.4	1	54	50	55	50	4.9	4.9	25	9	21		3
										2	39	37	67	63	6.5	5.2	31	5	31		1
										3	50	46	58	54	3.6	3.3	15	7	36		
142 (14)	16	Union Bay	28/02/85	1620	17				7.1		Water haul										
142 (14)	17	Lower Baynes Sound	01/03/85	1948	25			1		1	75	49	78	51	2.3	2.3	20	3	55		9
142 (14)	18	Komas Bluff	02/03/85	0546	30	1000 / 1500	500	100	6.8	1	57	59	40	41	9.4	11.5	30	1	9		1
										2	46	49	48	51	11.3	11.1	41	0	7		2
										3	59	61	37	39	8.0	10.3	32	1	4		1
										4	46	46	53	54	10.1	9.4	38	3	12		2
										5	39	45	48	55	9.2	8.4	38	7	3		0
142 (14)	19	Hornby I., Ferry Dock	02/03/85	0806	30						Water haul										
142 (14)	20	1 mi S. Phipps Pt.	02/03/85	0858							Water haul										

Table 20 (cont'd). Seine set data and roe yield information. ROE HERRING CHARTER SEINER "NITA MARIA", STAT. AREAS 14 and 17, 1985.

Section (Area)	Set No.	Location	D/M/Y	Time	Dep. (fa)	Tonnage			Temp (°C)	Test No.	Sex Ratio				Roe Yield %		Roe Grade (Pcs)			Spnd. out	Juv. or immat.
						In loc.	Set on	Est. catch			M		F		Wt.	Adj. wt.	#1	#2	#3		
											No.	%	No.	%							
142 (14)	21	Komas Bluff	03/03/85	0414	30		150	100	6.8	1	58	54	50	46	7.6	8.3	36	2	12		
										2	44	43	59	57	10.1	8.9	47	5	7		
										3	49	49	52	51	9.6	9.4	40	4	8		
										4	46	45	57	55	8.1	7.4	33	5	19		
										5	45	45	56	55	9.6	8.7	34	5	17		
142 (14)	22	Comox Bar	03/03/85	0835	22						Water haul										
142 (14)	23	Komas Bluff	04/03/85	0424	35	2500	300	150	6.9	1	70	53	61	47	5.5	5.9	34	1	26	4	
							500	200		2	96	52	88	48	5.0	5.2	46	9	33	8	
142 (14)	24	1/2 mi SW. of Deep Hole Can Bouy	04/03/85	0948	35		125	25	7.0	1	67	52	62	48	5.4	5.6	29	10	23		
										2	75	60	51	40	5.0	6.3	27	4	20		
										3	63	47	70	53	5.5	5.2	35	13	22		
142 (14)	25	Just inside Deep Hole Can Bouy	05/03/85	1852	45	3000	300	200	7.0	1	73	62	41	36	4.9	6.8	25	7	9	5	
										2	71	63	41	37	6.5	8.8	28	3	10	2	
										3	57	55	47	45	8.1	9.0	36	3	8	2	
142 (14)	26	Lambert Chan., Chrome I.	05/03/85	2053		300	15	5	6.9	1	44	46	51	54	11.7	10.8	43	5	3	4	
										2	43	47	48	53	9.7	9.2	34	6	8	9	
										3	45	52	41	48	9.3	9.7	34	2	5	6	
										4	48	52	44	48	9.4	9.8	36	3	5	3	
142 (14)	27	2 1/4 mi off Denman I. Hump	06/03/85	0858							Water haul										
142 (14)	28	1 mi off Denman I. Hump	06/03/85	1116	40				7.9	1	29	44	37	56			3	0	34		
142 (14)	29	1 mi off Komas Bluff	06/03/85	1357	40						Water haul										

Table 20 (cont'd). Seine set data and roe yield information. ROE HERRING CHARTER SEINER "NITA MARIA", STAT. AREAS 14 and 17, 1985.

Section (Area)	Set No.	Location	D/M/Y	Time	Dep. (fa)	Tonnage			Temp (°C)	Test No.	Sex Ratio				Roe Yield %		Roe Grade (Pcs)			Spnd. out	Juv. or immat.
						In loc.	Set on	Est. catch			M		F		Wt.	Adj. wt.	#1	#2	#3		
											No.	%	No.	%							
142 (14)	30	Komas Bluff	06/03/85	1449	35						Water haul										
173 (17)	31	1 mi S. of Round I., Stuart Chan.	09/03/85	1920		3000	75	50	6.6	1	69	59	48	41	8.5	10.4	40	2	6		1
										2	54	47	62	53	10.0	9.4	52	4	6		
										3	61	54	52	46	8.3	9.0	35	3	14		
173 (17)	32[a]	Danger Reef, Stuart Chan.	10/03/85	1620		2000	75	40	6.8	1	54	59	37	41	10.5	12.8	34	1	2		
										2	52	57	39	43	11.0	12.8	36	2	1		
										3	50	50	51	51	12.3	12.1	48	0	3		
										4	45	49	46	51	10.2	10.0	37	4	5		
										5	58	59	41	41	8.0	9.8	36	2	3		
173 (17)	33	Yellow Pt., Stuart Chan.	11/03/85	1925			50	15	6.9	1	64	52	60	48	8.8	9.2	39	3	18	1	1
										2	65	61	42	39	7.7	9.9	28	0	14		11
										3	62	51	60	49	9.5	9.7	44	5	11		4
173 (17)	34	Yellow Pt., Stuart Chan.	14/03/85	1637	35		15	15	7.5	1	75	61	48	39	5.4	6.9	37	8	3	7	
										2	67	61	43	39	9.2	11.8	41	0	2	2	
										3	59	57	44	43	8.1	9.4	40	3	1	5	
172 (17)	35	Northumberland Channel	15/03/85	0827	55	1500	150	150	6.9	1	114	99	1	1	0	-	0	0	0		
										2	120	98	2	2	0	-	1	0	1		
172 (17)	36	2 mi off Neck Pt.	15/03/85	1300	100		200		8.0		Water haul										
172 (17)	37	Northwest Bay	16/03/85	0913	50		75/100		7.2		Water haul										
		Komas Bluff	06/03/85		Fishery sample ("Vanisle")						60	63	36	37	6.4	8.6	31	0	5		

[a] Charter payment herring.

Table 21. Length frequency distribution of herring. ROE HERRING CHARTER SEINER "NITA MARIA", STAT. AREAS 14 and 17, 1985.

Section (Area)	Set No.	Location	D/M/Y	Time	Biol. sample No.	Length Frequency (cm) 12-13	13-14	14-15	15-16	16-17	17-18	18-19	19-20	20-21	21-22	22-23	23-24	24-25	25-26	26-27	27-28	Sample size	Average length (cm)	Cutoff (cm)	% Below cutoff
172 (17)	1	Northumberland Channel	20/02/85	1810	1	1	1	9	15	18	16	19	7	7	5			1				99	17.5	19.0	80
171 (17)	2	Perlier Pass (Cardale Pt.)	21/02/85	0630	2			1	2	4	4	7	18	23	9	13	10	7	1			99	20.7	19.0	18
171 (17)	3	Wallace I.	21/02/85	1915	3		1	2	14	17	21	23	8	7	6	1						100	17.8	19.0	78
171 (17)	4	Parker I.	22/02/85	1306		Water haul																			
171 (17)	5	2 mi SE. of Perlier Pass	23/02/85	0545	4				1	4	5	15	18	18	20	13	6	1				101	20.3	19.0	25
171 (17)	6	Off Pirates Cove	23/02/85	1050		Water haul																			
172 (17)	7	Northumberland Channel	24/02/85	0530	5				2	10	10	15	13	18	15	13	2	2				100	19.8	19.0	37
142 (14)	8	Norris Rock	25/02/85	1840	6					7	5	16	20	26	14	7	5	1				101	20.2	19.0	28
142 (14)	9	Lambert Chan.	25/02/85	2100	7			1	8	21	24	22	13	6	3							98	17.9	19.0	78
142 (14)	10	Chrome I.	26/02/85	0550	8				3	9	21	15	19	17	10	5	2					101	19.1	19.0	48
142 (14)	11	Lambert Chan.	26/02/85	0830		Water haul																			
142 (14)	12	1 1/2 mi NW. Collishaw Pt.	26/02/85	1520		Water haul																			
142 (14)	13	Lambert Chan., 1 mi NW. Collishaw Pt.	26/02/85	1745	9				2	5	15	29	26	12	6	2	1		1			99	19.1	19.0	52
142 (14)	14	Lambert Chan.	26/02/85	2045	10				3	9	26	17	16	22	7	1						101	18.8	19.0	55
142 (14)	15	3/4 mi off Phipps Pt., Lambert Chan.	27/02/85	0530	11				2	5	15	26	23	10	8	6	3	2				100	19.4	19.0	48
142 (14)	16	Union Bay	28/02/85	1620		Water haul																			
142 (14)	17	Lower Baynes Sound	01/03/85	1940	12				5	26	33	30	5	1		1						101	17.6	19.0	93

Table 21 (cont'd). Length frequency distribution of herring. ROE HERRING CHARTER SEINER "NITA MARIA", STAT. AREAS 14 and 17, 1985.

Section (Area)	Set No.	Location	D/M/Y	Time	Biol. sample No.	Length Frequency (cm) 12-13	13-14	14-15	15-16	16-17	17-18	18-19	19-20	20-21	21-22	22-23	23-24	24-25	25-26	26-27	27-28	Sample size	Average length (cm)	Cutoff (cm)	% Below cutoff
142 (14)	18	Komas Bluff	02/03/85	0546	13					1	12	16	17	20	12	17	4	2				101	20.3	19.0	29
142 (14)	19	Hornby I., Ferry Dock	02/03/85	0806					Water haul																
142 (14)	20	1 mi S. Phipps Pt.	02/03/85	0858					Water haul																
142 (14)	21	Komas Bluff	03/03/85	0414	14				3	3	14	22	19	14	17	3	2	2				99	19.5	19.0	42
142 (14)	22	Comox Bar	03/03/85	0635					Water haul																
142 (14)	23	Komas Bluff	04/03/85	0424	15					9	19	23	20	19	7	3	1					101	19.1	19.0	51
142 (14)	24	1/2 mi SW. of Deep Hole Can Bouy	04/03/85	0948	16				1	15	29	26	16	9	3	1						100	18.4	19.0	71
142 (14)	25	Just inside Deep Hole Can Bouy	05/03/85	1852	17				1	10	19	15	22	16	10	2	3					98	19.2	19.0	46
142 (14)	26	Lambert Chan., Chrome I.	05/03/85	2053	18				1	3	13	12	12	20	21	10	4	4				100	20.3	19.0	29
142 (14)	27	2 1/4 mi off Denman I. Hump	06/03/85	0858					Water haul																
142 (14)	28	1 mi off Denman I. Hump	06/03/85	1116								3	10	23	17	22	14	8	3	2		102	21.9	19.0	3
142 (14)	29	1 mi off Komas Bluff	06/03/85	1357					Water haul																
142 (14)	30	Komas Bluff	06/03/85	1449					Water haul																
173 (17)	31	1 mi S. of Round I., Stuart Chan.	09/03/85	1920	19					3	17	27	23	15	3	7	4	1				100	19.4	19.0	47
173 (17)	32	Danger Reef, Stuart Chan.	10/03/85	1620	20					2	6	11	16	15	22	14	9	5				100	20.8	19.0	19
173 (17)	33	Yellow Pt., Stuart Chan.	11/03/85	1925	21		1	3	9	13	9	21	16	10	10	6	1	2				101	18.8	19.0	55

Table 21 (cont'd). Length frequency distribution of herring. ROE HERRING CHARTER SEINER "NITA MARIA", STAT. AREAS 14 and 17, 1985.

Section (Area)	Set No.	Location	D/M/Y	Time	Biol. sample No.	Length Frequency (cm) 12-13	13-14	14-15	15-16	16-17	17-18	18-19	19-20	20-21	21-22	22-23	23-24	24-25	25-26	26-27	27-28	Sample size	Average length (cm)	Cutoff (cm)	% Below cutoff
173 (17)	34	Yellow Pt., Stuart Chan.	14/03/85	1637	22				2	9	12	25	22	16	6	3	2	3	1			101	19.3	19.0	48
172 (17)	35	Northumberland Channel	15/03/85	0827	23				1	1	5	18	20	20	22	7	3	2	1			100	20.3	19.0	25
172 (17)	36	2 mi off Neck Pt.	15/03/85	1300	24	Water haul																			
172 (17)	37	Northwest Bay	16/03/85	0913	25	Water haul																			
		Komas Bluff	06/03/85	Fishery sample ("Vanisle")					2	14	25	10	14	5	5	4	1					80	19.51	19.0	41

Table 22. Seine set data and roe yield information. ROE HERRING CHARTER SEINER "SARAHMARGARET", STAT. AREAS 12, 14 and 17, 1985.

Section (Area)	Set No.	Location	D/M/Y	Time	Dep. (fa)	Tonnage			Temp (°C)	Test No.	Sex Ratio				Roe Yield %		Roe Grade (Pcs)			Spnd. out	Juv. or immat.
						In loc.	Set on	Est. catch			M		F		Wt.	Adj. wt.	#1	#2	#3		
											No.	%	No.	%							
173 (17)	1	Pylades Channel	26/02/85	1900	30	1500	500	125	6.7	1	42	55	35	45	0	-	0	3	32		
										2	39	50	39	50	0	-	0	3	36		
										3	50	60	34	40	0	-	0	2	32		
173 (17)	2	Pylades Channel	26/02/85	2300	32	2000	50	6.7		1	33	45	41	55	0	-	0	4	37		1
										2	38	39	51	57	0	-	0	2	49		
										3	54	59	38	41	0	-	0	1	37		
171 (17)	3	Porlier Pass	27/02/85	2030	25	1000/1500	100	50	6.6	1	68	62	42	38	0	-	0	1	41		2
										2	71	60	48	40	0	-	0	2	46		1
										3	58	51	55	49	0	-	0	3	52		
173 (17)	4	Decourcy Group, 1/4 mi off Link I.	28/02/85	1630	35	500	200	100	8.0	1	58	63	34	37	0.5	0.7	3	6	25		
										2	44	55	36	45	0.25	0.3	2	7	28		
										3	39	46	46	54	1.4	1.3	5	7	34		
171 (17)	5	3/4 mi off Galiano Bluffs	28/02/85	2230	32		2000/2500	10	6.5	1	81	64	46	36	0	-	0	0	46		31
173 (17)	6	1/2 mi S. Boat Harbour	01/03/85	2100	25	5000/6000	100	25	7.7	1	58	62	35	38							
										2	38	44	49	56	2.4	2.1	0	12	23		2
										3	49	53	43	47	1.4	1.5	8	11	30		
										4	48	49	50	51	0.6	0.6	6	9	28		2
142 (14)	7	Hornby I., 3/4 mi from St. John Pt.	03/03/85	0445			250	100	7.7	1	47	53	42	47	8.5	9.0	31	4	7		1
										2	45	49	47	51	9.0	8.8	40	5	2	1	1
										3	54	53	47	47	7.6	8.1	35	4	8		
										4	43	46	50	54	9.7	9.0	39	4	7		
										5	38	42	52	58	11.0	9.5	42	8	2		1
142 (14)	8	Comox Bar	04/03/85	0545	37	400/500	75	10	7.6	1	74	67	37	33	5.9	8.9	26	4	7		
										2	58	55	47	45	8.2	9.1	34	3	10		1
										3	65	66	34	34	6.9	10.1	24	4	6	1	2

Table 22 (cont'd). Seine set data and roe yield information, ROE HERRING CHARTER SEINER "SARAH MARGARET", STAT. AREAS 12, 14 and 17, 1985.

Section (Area)	Set No.	Location	D/M/Y	Time	Dep. (fa)	Tonnage: In loc.	Tonnage: Set on	Tonnage: Est. catch	Temp (°C)	Test No.	Sex Ratio: M No.	Sex Ratio: M %	Sex Ratio: F No.	Sex Ratio: F %	Roe Yield %: Wt.	Roe Yield %: Adj. wt.	Roe Grade (Pcs): #1	Roe Grade (Pcs): #2	Roe Grade (Pcs): #3	Spnd. out	Juv. or immat.
142 (14)	9	1/2 mi off Phipps Pt.	05/03/85	0725			80			Water haul											
142 (14)	10	1/8 mi off Komas Bluff	05/03/85	1945	15	400	50	5	8.1	1	67	49	69	51	3.5	3.4	20	4	45	4	9
										2	67	52	61	48	3.2	3.3	17	4	40	6	8
										3	64	54	55	46	3.0	3.3	14	6	35	4	9
142 (14)	11	1/2 mi off Collishaw Pt.	06/03/85	0515	20	3000	100	40	6.9	1	44	48	48	52	11.0	10.6	42	1	5		
										2	54	57	41	43	9.2	10.7	36	1	4	1	
										3	43	43	56	57	10.3	9.0	41	6	9		
										4	53	58	39	42	9.8	11.7	50	2	7		
										5	48	51	46	49	10.3	10.5	41	1	4		
142 (14)	12	1 mi off Komas Bluff	06/03/85	1035	35		60		7.1		Water haul										
142 (14)	13	3/4 mi off Komas Bluff	06/03/85	1215			100				Water haul										
142 (14)	14	1 mi off Komas Bluff	06/03/85	1330	30		60				Water haul										
142 (14)	15	3/4 mi off Sandy I.	06/03/85	1415	28		60	35		1	35	50	35	50	12.2	12.2	34	1	0		
										2	30	43	40	57	13.5	11.8	39	1	0		
										3	41	55	34	45	12.5	13.9	34	0	0		
										4	51	51	49	49	14.7	15.0	48	1	0		
173 (17)	16	1 1/2 mi from Gabriola Pass	07/03/85	2000	32	300	80	25	7.6	1	52	58	38	42	9.3	11.1	32	4	2		
										2	57	63	33	37	9.0	12.2	27	3	3		
										3	48	55	40	45	9.5	10.6	34	4	2		
171 (17)	17	Off Spotlight Cove	08/03/85	2035	55	3000		30	7.9	1	83	58	59	42	1.4	1.7	10	11	38		12
										2	103	70	45	50	0.4	0.7	3	10	32		7

Table 22 (cont'd). Seine set data and roe yield information. ROE HERRING CHARTER SEINER "SARAH MARGARET", STAT. AREAS 12, 14 and 17, 1985.

Section (Area)	Set No.	Location	D/M/Y	Time	Dep. (fa)	Tonnage			Temp (°C)	Test No.	Sex Ratio				Roe Yield %		Roe Grade (Pcs)			Spnd. out	Juv. or immat.
						In loc.	Set on	Est. catch			M		F		Wt.	Adj. wt.	#1	#2	#3		
											No.	%	No.	%							
173 (17)	18	1 mi off Boat Harbour	09/03/85	1900	35	5000	150	100	7.6	1	61	56	48	44	10.4	11.8	42	1	5		2
										2	69	61	45	39	9.0	11.5	35	5	5		
										3	63	60	42	40	8.8	11.0	35	1	6		
173 (17)	19	1/8 mi off Link I.	10/03/85	0530	30		20	5	7.6	1	50	46	58	54	9.7	9.0	45	5	8		
							25	10		2	63	58	46	42	9.0	10.7	38	2	6		1
										3	70	58	50	42	7.9	9.4	39	7	4		
173 (17)	20	1/2 mi S. Yellow Pt.	10/03/85	1915		150					Back haul										
173 (17)	21	1 mi S. Boat Harbour	10/03/85	2110	35				7.9	1	47	59	33	41	10.0	12.2	28	2	3		
										2	47	53	42	47	10.1	10.7	29	5	8		
										3	47	54	40	46	9.2	10.0	33	2	5		
										4	45	57	34	43	11.1	12.9	30	2	2		
										5	48	54	41	46	9.7	10.5	33	2	6		
173 (17)	22[a]	1/4 mi S. Boat Harbour	10/03/85	2300	39		200		7.9	1	45	54	39	46	12.7	13.8	34	4	1		
										2	47	54	40	46	10.5	11.4	35	1	4		
										3	45	49	47	51	11.6	11.4	45	1	1		
										4	47	54	40	46	11.3	12.3	37	0	3		
173 (17)	23	1/2 mi W. Pylades I.	11/03/85	1630	30	5000	50	5	8.0	1	67	63	40	37	7.9	10.7	31	3	6		2
							60	10		2	56	54	48	46	8.1	8.8	39	3	6	1	
173 (17)	24	1/2 mi off Yellow Pt.	11/03/85	2200			200	30	8.0	1	62	55	50	45	9.6	10.7	44	3	3		
								40		2	62	55	51	45	9.2	10.2	42	7	2		
										3	63	57	47	43	9.8	11.4	45	2	0		
173 (17)	25	Northumberland Channel	12/03/85	0746	60		60	40	7.5	1	14	38	23	62	2.1	1.7	16	2	5	77	
							70	50													

Table 22 (cont'd). Seine set data and roe yield information. ROE HERRING CHARTER SEINER "SARAH MARGARET", STAT. AREAS 12, 14 and 17, 1985.

Section (Area)	Set No.	Location	D/M/Y	Time	Dep. (fa)	Tonnage: In loc.	Tonnage: Set on	Tonnage: Est. catch	Temp (°C)	Test No.	Sex Ratio: M No.	Sex Ratio: M %	Sex Ratio: F No.	Sex Ratio: F %	Roe Yield %: Wt.	Roe Yield %: Adj. wt.	Roe Grade (Pcs): #1	Roe Grade (Pcs): #2	Roe Grade (Pcs): #3	Spnd. out	Juv. or immat.
144 (14)	26	Northwest Bay	13/03/85	0430			40/50	35			All spawned out										
126 (12)	27	Head of Wakeman Sound	20/03/85	0500	30	800	50/60	30	8.3		All spawned out										
126 (12)	28	W. Side of entrance to Wakeman Sound	20/03/85	0930		500	70	50	7.6		Juvenile herring gilling in net - released										

[a] Charter payment herring.

Table 23. Length frequency distribution of herring. ROE HERRING CHARTER SEINER "SARAHMARGARET, STAT. AREAS 12, 14 and 17, 1985.

Section (Area)	Set No.	Location	D/M/Y	Time	Biol. sample No.	Length Frequency (cm) 12-13	13-14	14-15	15-16	16-17	17-18	18-19	19-20	20-21	21-22	22-23	23-24	24-25	25-26	26-27	27-28	Sample size	Average length (cm)	Cutoff (cm)	% Below cutoff
173 (17)	1	Pylades Channel	26/02/85	1900	1				1	1	4	8	15	14	13	16	21	8				101	21.4	19.0	14
173 (17)	2	Pylades Channel	26/02/85	2300	2		1	1		3	7	11	19	18	13	12	9	6	1			101	20.6	19.0	23
171 (17)	3	Porlier Pass	27/02/85	2030	3		1	2	2	13	12	21	16	16	6	5	4	1	1			100	19.1	19.0	51
173 (17)	4	Decourcy Group, 1/4 mi off Link I.	28/02/85	1630	4				2	6	10	18	10	18	11	9	8	6	1	1		100	20.3	19.0	36
171 (17)	5	3/4 mi off Galiano Bluff	28/02/85	2230	5			8	14	32	19	15	7	4		1						100	17.1	19.0	88
173 (17)	6	1/2 mi S. Boat Harbour	01/03/85	2100	6					7	4	16	19	21	14	11	3	2	2	1		100	20.3	19.0	27
142 (17)	7	Hornby I., 3/4 mi from St. John Pt.	03/03/85	0445	7				1	5	10	21	20	17	10	9	4	3				100	19.9	19.0	37
142 (17)	8	Comox Bar	04/03/85	0545	8				1	3	12	22	23	22	11	2	4	1				101	19.6	19.0	38
142 (17)	9	1/2 mi off Phipps Pt.	05/03/85	0725		Water haul																			
142 (14)	10	1/8 mi off Komas Bluff	05/03/85	1945	9				5	16	33	24	12	8	1							99	18.0	19.0	79
142 (14)	11	1/2 mi off Collishaw Pt.	06/03/85	0515	10					6	5	20	20	13	17	16	2		1			100	20.1	19.0	31
142 (14)	12	1 mi off Komas Bluff	06/03/85	1035		Water haul																			
142 (14)	13	3/4 mi off Komas Bluff	06/03/85	1215		Water haul																			
142 (14)	14	1 mi off Komas Bluff	06/03/85	1330		Water haul																			
142 (14)	15	3/4 mi off Sandy I.	06/03/85	1415	11					2	1	8	15	20	24	12	12	6				100	21.2	19.0	10
173 (17)	16	1 1/2 mi from Gabriola Pass	07/03/85	2000	12					2	4	14	22	19	14	14	5	6				100	20.6	19.0	20

Table 23 (cont'd). Length frequency distribution of herring. ROE HERRING CHARTER SEINER "SARAHMARGARET, STAT. AREAS 12, 14 and 17, 1985.

Section (Area)	Set No.	Location	D/M/Y	Time	Biol. sample No.	Length Frequency (cm) 12-13	13-14	14-15	15-16	16-17	17-18	18-19	19-20	20-21	21-22	22-23	23-24	24-25	25-26	26-27	27-28	Sample size	Average length (cm)	Cutoff (cm)	% Below cutoff
171 (17)	17	Off Spotlight Cove	08/03/85	2035	13			2	2	17	34	31	6	6	1	1						100	17.5	19.0	86
173 (17)	18	1 mi off Boat Harbour	09/03/85	1900	14			2	1	6	13	18	23	20	6	6	1	3	1			100	19.5	19.0	40
173 (17)	19	1/8 mi off Link I.	10/03/85	0530	15			1	2	4	20	24	22	13	5	6	3	2				102	19.2	19.0	50
173 (17)	20	1/2 mi S. Yellow Pt.	10/03/85	1915						Back haul															
173 (17)	21	1 mi S. Boat Harbour	10/03/85	2110	16					2	4	7	11	21	10	10	24	11	2			102	21.6	19.0	13
173 (17)	22	1/4 mi S. Boat Harbour	10/03/85	2300	17				2	11	16	8	19	10	11	12	7	4	1			101	19.9	19.0	37
173 (17)	23	1/2 mi W. Pylades I.	11/03/85	1630	18					9	14	30	16	17	5	4	4	1				100	19.3	19.0	53
173 (17)	24	1/2 mi off Yellow Pt.	11/03/85	2200	19				1	3	8	17	25	19	16	7	5					101	20.0	19.0	29
173 (17)	25	Northumberland Channel	12/03/85	0746	20			1	1	7	6	17	22	16	6	9	6	6	1			98	20.1	19.0	33
144 (14)	26	Northwest Bay	13/03/85	0430	21			1	7	16	20	28	9	13	4	2						100	18.3	19.0	72
126 (12)	27	Head of Wakeman Sound	20/03/85	0500	22	5	36	36	11	8	3	1		1								101	14.5	19.0	98
126 (12)	28	W. Side of entrance to Wakeman Sound	20/03/85	0930	23	Juvenile herring - released																			

Table 24. Seine set data and roe yield information. ROE HERRING CHARTER SEINER "ARGENT FISHER", STAT. AREAS 14, 15 and 17, 1985.

Section (Area)	Set No.	Location	D/M/Y	Time	Dep. (fa)	Tonnage In loc.	Tonnage Set on	Tonnage Est. catch	Temp (°C)	Test No.	Sex Ratio M No.	Sex Ratio M %	Sex Ratio F No.	Sex Ratio F %	Roe Yield % Wt.	Roe Yield % Adj. wt.	Roe Grade (Pcs) #1	#2	#3	Spnd. out	Juv. or Immat.
172 (17)	1	Nanoose Maude I.	27/02/85	1900	30	600/800	250	200	7.6	1	69	56	54	44	0	-	0	2	52		13
144 (14)	2	French Creek	28/02/85	0715	40	40	5	2	7.9	1	42	39	65	61	0.8	0.7	4	2	59		36
142 (14)	3	Lambert Chan. (Shingle Pt.)	28/02/85	1145	28	500	150	100		1	47	57	36	43	7.6	8.8	26	6	4		
										2	49	58	35	42	7.7	9.2	30	3	2		
										3	44	58	32	42	7.2	8.6	22	4	6		
										4	43	56	34	44	7.7	8.8	26	3	5		
142 (14)	4	Lambert Chan. (Ford Cove)	28/02/85	1330	50	300	200		8.2		Water haul										
143 (14)	5	Bowser	28/02/85	2100	15	3000/4000		15	8.0	1	64	54	55	46	2.7	2.9	16	7	32		2
142 (14)	6	Tribune Bay	01/03/85	1550		500	200	0			Water haul										
142 (14)	7	Lambert Chan.	01/03/85	2005	40	2000	100	75	8.0	1	54	50	55	50	6.6	6.6	29	5	21		3
										2	49	51	47	49	9.4	9.6	32	6	9		2
										3	39	40	58	60	10.1	8.4	37	6	15		4
										4	45	45	56	55	6.7	6.1	30	7	19		2
										5	42	42	59	58	10.8	9.3	40	2	17		2
142 (14)	8	Lambert Chan. (Ford Cove)	02/03/85	0455	25/40		250	200	7.8	1	46	51	45	49	9.5	9.7	29	4	12		2
										2	45	47	51	53	9.5	9.0	40	4	7		
										3	37	41	53	59	8.5	7.2	37	9	7		
										4	48	53	42	47	9.2	9.8	35	2	5		1
142 (14)	9	1 3/4 mi off Komas Bluff	02/03/85	0745	35		200		8.0		Water haul										

Table 24 (cont'd). Seine set data and roe yield information. ROE HERRING CHARTER SEINER "ARGENT FISHER", STAT. AREAS 14, 15 and 17, 1985.

Section (Area)	Set No.	Location	D/M/Y	Time	Dep. (fa)	Tonnage: In loc.	Tonnage: Set on	Tonnage: Est. catch	Temp (°C)	Test No.	Sex Ratio: M No.	Sex Ratio: M %	Sex Ratio: F No.	Sex Ratio: F %	Roe Yield %: Wt.	Roe Yield %: Adj. wt.	Roe Grade (Pcs): #1	#2	#3	Spnd. out	Juv. or immat.
142 (14)	10	2 mi off Komas Bluff	02/03/85	0900	50		200		8.0		Water haul										
142 (14)	11	Lambert Chan., Norris Rock	02/03/85	1945	60	4000/5000	350	300	8.0	1	43	50	43	50	7.5	7.5	28	5	10		1
										2	53	60	35	40	6.2	7.8	24	8	3		
										3	37	43	50	57	8.5	7.5	31	10	9		
										4	43	50	43	50	7.7	7.7	24	8	11		
142 (14)	12	Comox Bar	03/03/85	0530	40	1000	150	130	7.8	1	54	59	37	41	5.6	6.8	21	9	7		
										2	68	65	37	35	5.6	8.0	23	5	9		2
										3	51	52	48	48	7.5	7.8	32	7	9		
										4	85	58	61	42	5.9	7.0	39	6	16		
142 (14)	13	1/2 mi SE. of Shingle Spit	04/03/85	0450	30	1000		40		1	50	56	40	44	9.5	10.8	32	3	5	3	3
										2	51	50	50	50	8.8	8.8	36	5	9	3	3
										3	46	43	62	57	7.9	6.9	41	8	13	2	1
										4	56	55	46	45	7.2	8.0	31	4	11	1	5
142 (14)	14	Baynes Sound, Chrome I.	04/03/85	0605	25	1000	300	200		1	37	44	48	56	9.8	8.8	33	10	5		1
										2	43	44	54	56	9.8	8.8	39	9	6		
										3	42	44	53	56	8.5	7.6	40	4	9		
										4	45	46	53	54	7.9	7.3	32	7	14		
										5	50	51	49	49	7.5	7.7	37	7	5		
142 (14)	15	Baynes Sound, off Mud Bay	04/03/85	0925	26		100		8.0		Water haul										
142 (14)	16	Baynes Sound	04/03/85	1030	29		35	1	8.0	1	64	56	50	44	6.9	7.8	32	6	12	1	
										2	65	52	61	48	5.2	5.4	39	6	16		
										3	49	43	64	57	6.1	5.4	31	12	21		1

Table 24 (cont'd). Seine set data and roe yield information. ROE HERRING CHARTER SEINER "ARGENT FISHER", STAT. AREAS 14, 15 and 17, 1985.

Section (Area)	Set No.	Location	D/M/Y	Time	Dep. (fa)	Tonnage: In loc.	Tonnage: Set on	Tonnage: Est. catch	Temp (°C)	Test No.	Sex Ratio: M No.	Sex Ratio: M %	Sex Ratio: F No.	Sex Ratio: F %	Roe Yield %: Wt.	Roe Yield %: Adj. wt.	Roe Grade (Pcs): #1	Roe Grade (Pcs): #2	Roe Grade (Pcs): #3	Spnd. out	Juv. or immat.
142 (14)	17	Baynes Sound	04/03/85	1845	35	4000	150	65	7.9	1	61	59	43	41	8.0	9.8	34	2	7		
										2	50	51	48	49	8.0	8.2	33	7	8		
										3	55	52	50	48	8.8	9.2	38	2	10		2
142 (14)	18	Off Denman I., Perry Dock	05/03/85	0445	25/30	2000	100	60	7.9	1	60	55	49	45	7.4	8.2	36	4	9	3	
										2	66	60	44	40	4.1	5.1	23	8	13	1	
										3	60	58	44	42	5.8	6.9	27	5	12	2	
142 (14)	19	Baynes Sound, Deep Hole	05/03/85	0920	30	2000	300	5	7.9	1	75	58	55	42	5.6	6.7	31	4	20		
										2	80	65	44	35	5.6	8.0	30	2	12		
152 (15)	20	Between Lund and Savary I.	06/03/85	1050	60	200	150		8.3		Water haul										
142 (14)	21	Baynes Sound, Henry Bay	07/03/85	1530	8/13	4000	130	100	7.9	1	50	57	38	43	9.5	11.0	36	1	1		
										2	47	49	48	51	10.7	10.5	43	2	3	1	
										3	51	55	41	45	10.9	12.1	39	1	1		
142 (14)	22	1 mi SE. Ferry Landing, Baynes Sound	07/03/85	2120	27		150		7.5		Water haul										

Charter payment herring caught at Kitkatla.

Table 25. Length frequency distribution of herring. ROE HERRING CHARTER SEINER "ARGENT FISHER, STAT. AREAS 14, 15 and 17, 1985.

Section (Area)	Set No.	Location	D/M/Y	Time	Biol. sample No.	Length Frequency (cm) 12-13	13-14	14-15	15-16	16-17	17-18	18-19	19-20	20-21	21-22	22-23	23-24	24-25	25-26	26-27	27-28	Sample size	Average length (cm)	Cutoff (cm)	% Below cutoff
172 (17)	1	Nanoose Maude I.	27/02/85	1900	1		1		3	7	19	18	13	9	6	3	1	1				81	18.8	19.0	59
144 (14)	2	French Creek	28/02/85	0715	2				10	13	15	16	4	6	4	5	5	2				80	18.7	19.0	68
142 (14)	3	Lambert Chan. (Shingle Pt.)	28/02/85	1145	3						2	3	14	19	27	22	8	6				101	21.4	19.0	5
142 (14)	4	Lambert Chan. (Ford Cove)	28/02/85	1530		Water haul																			
143 (14)	5	Bowser	28/02/85	2100	4				2	6	23	21	24	10	7	4	2					99	19.0	19.0	53
142 (14)	6	Tribune Bay	01/03/85	1550		Water haul																			
142 (14)	7	Lambert Chan.	01/03/85	2005	5					2	10	17	18	21	15	11	3	1				98	20.1	19.0	30
142 (14)	8	Lambert Chan. (Ford Cove)	02/03/85	0455	6					2	3	14	20	24	14	13	7	2				99	20.5	19.0	19
142 (14)	9	1 3/4 mi off Komas Bluff	02/03/85	0745		Water haul																			
142 (14)	10	2 mi off Komas Bluff	02/03/85	0900		Water haul																			
142 (14)	11	Lambert Chan., Norris Rock	02/03/85	1945	7				1	1	5	13	20	24	18	11	4	3				100	20.4	19.0	20
142 (14)	12	Comox Bar	03/03/85	0530	8				1	4	6	13	23	17	22	8	4	1	1			100	20.2	19.0	24
142 (14)	13	1/2 mi SE. of Shingle Spit	04/03/85	0450	9			1		3	5	21	24	19	8	9	3	4				97	20.0	19.0	31
142 (14)	14	Baynes Sound, Chrome I.	04/03/85	0605	10			1	2	5	9	22	16	16	19	6	2	1	1			100	19.7	19.0	39
142 (14)	15	Baynes Sound, off Mud Bay	04/03/85	0925		Water haul																			
142 (14)	16	Baynes Sound	04/03/85	1030	11				1	1	16	27	20	16	10	4	5					100	19.5	19.0	45

Table 25 (cont'd). Length frequency distribution of herring. ROE HERRING CHARTER SEINER "ARGENT FISHER, STAT. AREAS 14, 15 and 17, 1985.

Section (Area)	Set No.	Location	D/M/Y	Time	Biol. sample No.	Length Frequency (cm) 12-13	13-14	14-15	15-16	16-17	17-18	18-19	19-20	20-21	21-22	22-23	23-24	24-25	25-26	26-27	27-28	Sample size	Average length (cm)	Cutoff (cm)	% Below cutoff
142 (14)	17	Baynes Sound	04/03/85	1845	12			1	1	3	19	20	25	8	11	8	4					100	19.4	19.0	44
142 (14)	18	Off Denman I., Perry Dock	05/03/85	0445	13				2	4	18	23	24	17	8	2	1	1				100	19.2	19.0	47
142 (14)	19	Baynes Sound, Deep Hole	05/03/85	0920	14				1	11	33	30	21	7	2							105	18.3	19.0	75
152 (15)	20	Between Lund and Savary I.,	06/03/85	1050		Water haul																			
142 (14)	21	Baynes Sound, Henry Bay	07/03/85	1530	15					6	15	28	27	9	10	3						98	20.1	19.0	21
142 (14)	22	1 mi SE. Ferry Landing, Baynes Sound	07/03/85	2120		Water haul																			

Table 26. Seine set data and roe yield information. ROE HERRING CHARTER SEINER "PACIFIC HARVESTER", STAT. AREAS 23 and 24, 1985.

Section (Area)	Set No.	Location	D/M/Y	Time	Dep. (fa)	Tonnage			Temp (°C)	Test No.	Sex Ratio				Roe Yield %		Roe Grade (Pcs)			Spnd. out	Juv. or immat.
						In loc.	Set on	Est. catch			M		F		Vol.	Adj. vol.	#1	#2	#3		
											No.	%	No.	%							
232 (23)	1	1/2 mi off Twin Rivers	27/02/85	0900	28			200 / 300		1	77	59	53	41	2.0	2.4	10	18	20	50	
										2	69	54	58	46	2.5	2.7	9	14	22	38	2
232 (23)	2	Stopper I., Nacoah Passage	27/02/85	1125	20	100	10	5	7.4	1	57	48	61	52	7.0	6.7	31	8	22	4	
										2	65	55	54	45	5.0	5.6	19	7	28	6	1
244 (24)	3	Millar Channel N.	28/02/85	1325	60	200	100	0	8.4	Water haul											
244 (24)	4	Millar Channel	28/02/85	1415	62	200	80 / 90	0	8.4	Water haul											
244 (24)	5[b]	Millar Channel	28/02/85	1720	20		150		8.3	1	42	41	60	59	14.5	12.3	55	3	2		
										2	32	30	75	70	17.5	12.5	71	1	3		
										3	42	36	74	64	16.0	12.5	69	3	2		
										4	54	53	48	47	13.0	13.8	44	3	1		
										5	60	48	64	52	14.5	13.9	63	1	0		2
238 (23)	6	Cabbage Rocks	02/02/85	1600		100	20			Water haul											
244 (24)	7	Bawden Bay	04/03/85	1439	20	150	100			Water haul											
244 (24)	8	Bawden Bay	04/03/85	1505	21		100			Water haul											
243 (24)	9	Sydney Inlet	05/03/85	0830		75	40			Water haul											
243	10	Sydney Inlet	05/03/85	1026	40	300	75	50 lb		Water haul											

Table 26 (cont'd). Seine set data and roe yield information. ROE HERRING CHARTER SEINER "PACIFIC HARVESTER", STAT. AREAS 23 and 24, 1985.

Section (Area)	Set No.	Location	D/M/Y	Time	Dep. (fa)	Tonnage: In loc.	Tonnage: Set on	Tonnage: Est. catch	Temp (°C)	Test No.	Sex Ratio: M No.	Sex Ratio: M %	Sex Ratio: F No.	Sex Ratio: F %	Roe Yield %: Vol.	Roe Yield %: Adj. vol.	Roe Grade (Pcs): #1	Roe Grade (Pcs): #2	Roe Grade (Pcs): #3	Spnd. out	Juv. or immat.
243 (24)	11	Sydney Inlet	05/03/85	1157		400	50	50	6.7	1	51	44	64	56	15.0	13.4	63	1	0		
										2	56	46	67	54	14.8	13.7	65	0	2		
243 (24)	12	Sydney Inlet	05/03/85	2035	31	400	100	100 lb	6.5	Water haul											
243 (24)	13	Sydney Inlet	06/03/85	0601	60	475	75	30	7.1	1	57	49	59	51	14.0	13.7	58	0	1		
										2	68	61	44	39	12.5	16.0	42	0	2		
243 (24)	14	Sydney Inlet	06/03/85	1053	27	400	40	0.75		1	131	69	58	31	7.5	12.1	53	1	4	5	
										2	127	65	68	35	6.0	8.6	58	3	7	6	
244 (24)	15	Millar Channel	06/03/85	1537	58		60	60	7.0	1	45	34	87	66	19.0	14.4	85	1	5		
										2	56	42	85	64	18.0	14.1	82	0	3		
244 (24)	16	Millar Channel	07/03/85	1104	30	250	110	110	7.6	1	63	51	60	49	14.5	14.8	57	0	3		
										2	63	49	66	51	14.5	14.2	66	0	0		
232 (23)	17	Toquart Bay	09/03/85	1116	19	200	200	150	8.0	1	81	57	62	43	11.0	12.8	54	3	5		
										2	70	48	77	52	14.0	13.5	73	1	3		3
										3	88	54	74	46	10.5	11.4	66	5	3		2
231 (23)	18	Pipestem Inlet	09/03/85	1425	20	No herring (anchovies)															
232 (23)	19	Macoah Pass	09/03/85	2014	22	200	70	1	7.2	1	94	56	73	44	11.5	13.1	67	2	4		
										2	93	53	81	47	11.0	11.7	72	4	5		
231 (23)	20	Effingham Bay	11/03/85	0442	44	200	175	60	6.5	1	94	59	65	41	9.5	11.6	56	2	7		
										2	97	54	84	46	10.0	10.9	61	5	18		6
232 (23)	21	Macoah Pass	11/03/85	1155	19	500	20	40	7.6	1	71	49	73	51	13.0	12.7	70	1	2		
										2	81	52	76	48	12.0	12.5	75	0	1	2	

Table 26 (cont'd). Seine set data and roe yield information. ROE HERRING CHARTER SEINER "PACIFIC HARVESTER", STAT. AREAS 23 and 24, 1985.

Section (Area)	Set No.	Location	D/M/Y	Time	Dep. (fa)	Tonnage In loc.	Tonnage Set on	Tonnage Est. catch	Temp (°C)	Test No.	Sex Ratio M No.	Sex Ratio M %	Sex Ratio F No.	Sex Ratio F %	Roe Yield % Vol.	Roe Yield % Adj. vol.	Roe Grade (Pcs) #1	#2	#3	Spnd. out	Juv. or immat.
233 (23)	22	Mayne Bay	11/03/85	1555	22	500		150		1	74	48	81	52	14.0	13.5	77	0	4	1	
										2	75	48	81	52	13.5	13.0	80	0	1		
232 (23)	23	Forbes I.	13/03/85	1740	27	200	70	70		1	74	50	73	50	13.0	13.0	72	0	1		1
										2	78	51	74	49	12.5	12.8	70	3	1		3
232 (23)	24	Crow I.	14/03/85	1025	29	200	100			Water haul											
232 (23)	25	Forbes I.	14/03/85	1205	25	200	70	5	8.1	1	111	57	83	43	8.5	9.9	72	1	10	3	
										2	140	70	60	30	6.0	10.0	58	0	2	7	
232 (23)	26	Stopper I.	14/03/85	1555		300	50	30	8.4	1	68	44	85	56	14.0	12.5	83	1	1	2	
						400				2	78	47	87	53	14.5	13.7	83	3	1		1
233 (23)	27	Mayne Bay	15/03/85	1520	15	200	200	100		1	79	51	77	49	12.0	12.2	75	1	1	3	
										2	76	50	76	50	12.5	12.5	72	3	1	1	
232 (23)	28	Forbes I.	16/03/85	0945	28	250	60			Water haul											
232 (23)	29	Forbes I.	16/03/85	1125	28	250	150	100		1	70	49	73	51	12.0	11.8	69	2	2		
										2	73	53	66	47	12.0	12.8	64	2	0		1
232 (23)	30	Crow I.	17/03/85	0930	30	250	150	120		1	69	42	95	58	13.0	11.2	93	1	1	1	1
										2	66	37	111	63	14.5	11.5	107	2	2	4	
231 (23)	31	Capstan I., Sechart Ch.	20/03/85	1326	34	500	50	40	8.3	1	72	55	59	45	11.5	12.8	57	2	0		
										2	64	45	78	55	14.0	12.7	77	1	0		
233 (23)	32	Mayne Bay	22/03/85	1037	20	150	50		8.5	1	113	58	83	42	11.0	13.1	78	3	2		1
										2	97	51	94	49	13.0	13.3	88	0	6		

* Charter payment herring.

Table 27. Length frequency distribution of herring. ROE HERRING CHARTER SEINER "PACIFIC HARVESTER, STAT. AREAS 23 and 24, 1985.

Section (Area)	Set No.	Location	D/M/Y	Time	Biol. sample No.	Length Frequency (cm) 12 13	13 14	14 15	15 16	16 17	17 18	18 19	19 20	20 21	21 22	22 23	23 24	24 25	25 26	26 27	27 28	Sample size	Average length (cm)	Cutoff (cm)	% Below cutoff
232 (25)	1	1/2 mi off Twin Rivers	27/02/85	0900	1	No length measurement taken																			
232 (25)	2	Stopper I., Nacoah Passage	27/02/85	1125	2				1		4	8	19	28	20	6	6	6				98	20.7	19.0	13
244 (24)	3	Miller Channel N.	28/02/85	1325		Water haul																			
244 (24)	4	Miller Channel	28/02/85	1415		Water haul																			
244 (24)	5	Miller Channel	28/02/85	1720	3						4	5	18	13	18	19	15	7	1			100	21.4	19.0	9
238 (23)	6	Cabbage Rocks	02/02/85	1600		Water haul																			
244 (24)	7	Bawden Bay	04/03/85	1439		Water haul																			
244 (24)	8	Bawden Bay	04/03/85	1505		Water haul																			
243 (24)	9	Sydney Inlet	05/03/85	0830		Water haul																			
243 (24)	10	Sydney Inlet	05/03/85	1026		Water haul																			
243 (24)	11	Sydney Inlet	05/03/85	1157	4							7	8	26	28	18	9	3	1			100	21.4	19.0	7
243 (24)	12	Sydney Inlet	05/03/85	2035		Water haul																			
243 (24)	13	Sydney Inlet	06/03/85	0601	5				1	3	5	9	12	27	15	8	10	12				102	21.0	19.0	18
243 (24)	14	Sydney Inlet	06/03/85	1053	6				2	13	20	25	13	15	8	2						98	18.7	19.0	61
244 (24)	15	Miller Channel	06/03/85	1537	7					6	9	12	22	26	17	4	1		1	1		99	19.9	19.0	27
244 (24)	16	Miller Channel	07/03/85	1104	8					3	7	8	14	23	18	10	11	4	1			99	20.8	19.0	18

Table 27 (cont'd) . Length frequency distribution of herring. ROE HERRING CHARTER SEINER "PACIFIC HARVESTER, STAT. AREAS 23 and 24, 1985.

Section (Area)	Set No.	Location	D/M/Y	Time	Biol. sample No.	Length Frequency (cm) 12-13	13-14	14-15	15-16	16-17	17-18	18-19	19-20	20-21	21-22	22-23	23-24	24-25	25-26	26-27	27-28	Sample size	Average length (cm)	Cutoff (cm)	% Below cutoff
232 (23)	17	Toquart Bay	09/03/85	1116	9				2	5	14	21	19	24	9	3	3			1		101	19.5	19.0	42
231 (23)	18	Pipestem Inlet	09/03/85	1425		No herring (anchovies)																			
232 (23)	19	Necosh Pass	09/03/85	2014	10				2	18	19	19	12	17	6	3	2	1				99	18.8	19.0	59
231 (23)	20	Effingham Bay	11/03/85	0442	11				4	5	23	17	11	7	8	5						80	18.8	19.0	61
232 (23)	21	Necosh Pass	11/03/85	1155	12					5	11	10	23	14	8	1	3					75	19.5	19.0	35
233 (23)	22	Mayne Bay	11/03/85	1555	13				4	14	17	21	18	14	7	4	1					100	18.8	19.0	56
232 (23)	23	Forbes I.	13/03/85	1740	14				1	9	19	14	15	27	10	3		2				100	19.3	19.0	43
232 (23)	24	Crow I.	14/03/85	1025		Water haul																			
232 (23)	25	Forbes I.	14/03/85	1205	15			1	3	18	29	22	12	9	4	1						99	18.2	19.0	74
232 (23)	26	Stopper I.	14/03/85	1555	16			3	2	11	15	14	19	20	8	7	1		1			101	19.2	19.0	45
233 (23)	27	Mayne Bay	15/03/85	1520	17				1	5	13	24	19	19	6	8	3	1				99	19.5	19.0	43
232 (23)	28	Forbes I.	16/03/85	0945		Water haul																			
232 (23)	29	Forbes I.	16/03/85	1125	18				2	6	19	14	9	25	17	8	6	1	1			108	19.9	19.0	38
232 (23)	30	Crow I.	17/03/85	0930	19				5	20	17	15	18	15	4	2	1	1				98	18.6	19.0	58
231 (23)	31	Capstan I., Sechart Ch.	20/03/85	1526	20					2	4	26	17	25	11	12	1	1	1			100	20.1	19.0	32
233 (23)	32	Mayne Bay	22/03/85	1037	21				2	13	23	15	12	21	10	2	1		1			100	19.0	19.0	53

Table 28. Seine set data and roe yield information. ROE HERRING CHARTER SEINER "ELLING K", STAT. AREAS 24 and 25, 1985.

Section (Area)	Set No.	Location	D/M/Y	Time	Dep. (fa)	Tonnage			Temp (°C)	Test No.	Sex Ratio				Roe Yield %		Roe Grade (Pcs)			Spnd. out	Juv. or immat.
						In loc.	Set on	Est. catch			M		F		Vol.	Adj. vol.	#1	#2	#3		
											No.	%	No.	%							
244 (24)	1	Millar Channel	26/02/85	1822	50	500	100	50	7.9	1	48	42	65	58	15.5	13.4	59	4	2		
										2	57	45	70	55	12.0	10.9	60	2	8		
243 (24)	2	Sterling Pt.	27/02/85	0844	40		50		Water haul												
244 (24)	3	Top end Millar Channel	27/02/85	1057	40	2000/3000	200	100	7.9	1	53	52	48	48	12.0	12.5	45	2	1		
										2	47	45	57	55	15.0	13.6	56	1	0		
										3	35	32	73	68	17.0	12.5	69	1	3		
243 (24)	4	Sterling Pt.	28/02/85	1148	36		100	4	8.0	1	109	64	62	36	7.0	9.7	53	0	9		
										2	128	64	71	36	7.5	10.4	62	0	9		
244 (24)	5[a]	Top end Millar Channel	28/02/85	1458	32	2000/3000	150/200	75	8.1	1	43	49	45	51	11.0	10.8	41	2	2		
										2	62	58	45	42	10.0	11.9	42	1	2		
										3	38	48	42	52	10.5	10.1	39	1	2		
										4	42	44	54	56	14.0	12.5	51	1	2		
252 (25)	6	Saavedra I. (North)	02/03/85	0802	30	2000	600/800	200	8.2	1	56	46	67	54	11.5	10.6	63	0	4		
										2	61	48	65	52	12.0	11.5	59	0	6		
										3	69	49	71	51	12.0	11.8	62	3	6		
253 (25)	7	Esperanza (off 1/2 mi)	03/03/85	1042	35		500		7.8	Water haul											
253 (25)	8	1/4 mi North Rosa I.	03/03/85	1153	50		100		7.8	Water haul											
253 (25)	9	1 mi East Rosa Harbour	03/03/85	1645	60	6000/7000	600/700	300	7.9	1	70	51	67	49	11.0	11.2	67	0	0		
										2	70	47	79	53	14.0	13.2	73	0	6		
										3	72	50	73	50	12.0	12.0	68	2	3		
										4	72	47	80	53	14.0	13.2	74	2	4		

Table 28 (cont'd). Seine set data and roe yield information. ROE HERRING CHARTER SEINER "ELLING K", STAT. AREAS 24 and 25, 1985.

Section (Area)	Set No.	Location	D/M/Y	Time	Dep. (fa)	Tonnage: In loc.	Tonnage: Set on	Tonnage: Est. catch	Temp (°C)	Test No.	Sex Ratio: M No.	Sex Ratio: M %	Sex Ratio: F No.	Sex Ratio: F %	Roe Yield %: Vol.	Roe Yield %: Adj. vol.	Roe Grade (Pcs): #1	Roe Grade (Pcs): #2	Roe Grade (Pcs): #3	Spnd. out	Juv. or immat.
252 (25)	10	1/4 mi E. Rosa Harbour	03/03/85	1810	40	6000/7000	500	100	7.8	1	78	48	86	52	11.0	10.6	82	81	87		
										2	76	47	85	53	11.0	10.4	0	0	0		
										3	75	45	91	55	12.0	10.9	4	4	4		
253 (25)	11	1/4 mi E.NE. Rosa Harbour	04/03/85	1055	55	6000/7000	200		7.8	Water haul											
253 (25)	12	1 mi SW. of Center I.	04/03/85	1735		6000/7000	200		7.8	Water haul											
252 (25)	13	Narvaez I.	06/03/85	0750	80	700	300/400	100	8.1	1	80	53	71	47	10.5	11.2	68	0	3	1	
										2	88	54	75	46	10.0	10.9	69	0	6		
										3	75	47	84	53	12.0	11.3	73	0	11		
252 (25)	14	Saavedra I.	07/03/85	0805		2000	400/500	50	7.5	1	63	43	83	57	12.0	10.5	78	0	5		
										2	79	51	76	49	13.0	13.3	73	2	1		
										3	73	50	73	50	11.5	11.5	69	2	2		
253 (25)	15	Flower Islet	10/03/85	0810		400	75/100	20/25	7.9	1	53	40	78	60	13.8	11.5	74	3	1		
										2	59	42	81	58	15.5	13.4	81	0	0		
										3	57	40	86	60	14.5	12.1	83	2	1		
253 (25)	16	Double I.	13/03/85	0658	35	500	400	250	8.2	1	68	41	96	59	14.0	11.9	93	82	76		
										2	76	48	84	52	14.5	13.9	0	0	1		
										3	93	54	78	46	12.0	13.0	3	2	1		
243 (24)	17	Lower Sydney Inlet	15/03/85	0755	33	500	40		7.7	Water haul											
243 (24)	18	Lower Sydney Inlet	15/03/85	0830	31	500	50	50	7.6	1	70	48	76	52	14.0	13.5	74	1	1		2
										2	85	59	58	41	12.0	14.6	58	0	0	1	1
										3	78	51	75	49	14.5	14.8	74	1	0	1	

Table 28 (cont'd). Seine set data and roe yield information. ROE HERRING CHARTER SEINER "ELLING K", STAT. AREAS 24 and 25, 1985.

Section (Area)	Set No.	Location	D/M/Y	Time	Dep. (fa)	Tonnage			Temp (°C)	Test No.	Sex Ratio				Roe Yield %		Roe Grade (Pcs)			Spnd. out	Juv. or immat.
						In loc.	Set on	Est. catch			M		F		Vol.	Adj. vol.	#1	#2	#3		
											No.	%	No.	%							
243 (24)	19	Sydney Inlet	17/03/85	1535	27	1000	200	125	3.4	1	65	46	75	54	15.0	13.9	74	0	1		
										2	52	42	72	58	14.5	12.5	72	0	0	4	
										3	68	53	60	47	14.0	14.9	58	0	2	2	
243 (24)	20	Sydney Inlet	18/03/85	0825		1500	200	125	8.0	1	55	50	54	50	12.0	12.0	54	0	0	2	
										2	59	51	57	49	14.0	14.3	55	2	0	2	
										3	61	50	62	50	12.0	12.0	61	1	0	3	
243 (24)	21	West Side of Sydney Inlet	20/03/85	0840	33	2000	75	15	7.9	1	58	46	69	54	14.0	13.0	69	0	0	2	1
										2	61	43	81	57	16.0	14.0	81	0	0		2
										3	77	52	72	48	13.5	14.1	70	2	0	2	1

[8] Charter payment herring.

Table 29. Length frequency distribution of herring. ROE HERRING CHARTER SEINER "ELLING K, STAT. AREAS 24 and 25, 1985.

Section (Area)	Set No.	Location	D/M/Y	Time	Biol. sample No.	Length Frequency (cm) 12-13	13-14	14-15	15-16	16-17	17-18	18-19	19-20	20-21	21-22	22-23	23-24	24-25	25-26	26-27	27-28	Sample size	Average length (cm)	Cutoff (cm)	% Below cutoff
244 (24)	1	Millar Channel	26/02/85	1822	1						2	8	11	25	19	10	14	9	2	1		101	21.5	19.0	10
243 (24)	2	Starling Point	27/02/85	0844		Water haul																			
244 (24)	3	Top end Millar Channel	27/02/85	1057	2							3	9	14	30	14	15	10	4	1		100	22.0	19.0	3
243 (24)	4	Starling Pt.	28/02/85	1148	3				1	18	23	23	24	5	4		1					99	18.4	19.0	66
244 (24)	5	Top end Millar Channel	28/02/85	1458	4						1	1	20	22	21	17	7	10				100	21.5	19.0	2
252 (25)	6	Saavedra I. (North)	02/03/85	0802	5						1	9	15	47	12	7	5	3	1			100	20.7	19.0	10
253 (25)	7	Esperanza (off 1/2 mi)	03/03/85	1042		Water haul																			
253 (25)	8	1/4 mi North Rosa I.	03/03/85	1153		Water haul																			
253 (25)	9	1 mi East Rosa Harbour	03/03/85	1645	6					4	7	25	30	17	3	10	2	2				100	19.7	19.0	36
253 (25)	10	1/4 mi E. Rosa Harbour	03/03/85	1810	7				1	5	31	36	17	6	2		2					100	18.5	19.0	73
253 (25)	11	1/4 mi E.NE. Rosa Harbour	04/03/85	1055	8	Water haul																			
253 (25)	12	1 mi SW. of Canter I.	04/03/85	1735	9	Water haul																			
252 (25)	13	Narvaez I.	06/03/85	1735	10					5	10	29	21	23	7	4	1					100	19.4	19.0	44
252 (25)	14	Saavedra I.	07/03/85	0805	11				2	15	19	13	21	22	6	3		1				102	19.0	19.0	48
253 (25)	15	Flower Islet	10/03/85	0810	12					3	9	9	29	16	13	8	9	3	1			100	20.3	19.0	21
253 (25)	16	Double I.	13/03/85	0658	13					6	11	18	31	16	6	7	4	1				100	19.6	19.0	35

Table 29 (cont'd). Length frequency distribution of herring. ROE HERRING CHARTER SEINER "ELLING K, STAT. AREAS 24 and 25, 1985.

Section (Area)	Set No.	Location	D/M/Y	Time	Biol. sample No.	Length Frequency (cm) 12 13	13 14	14 15	15 16	16 17	17 18	18 19	19 20	20 21	21 22	22 23	23 24	24 25	25 26	26 27	27 28	Sample size	Average length (cm)	Cutoff (cm)	% Below cutoff
243 (24)	17	Lower Sydney Inlet	15/03/85	0755		Water haul																			
243 (24)	18	Lower Sydney Inlet	15/03/85	0830	14					2	7	17	18	22	10	11	7	6				100	20.5	19.0	26
243 (24)	19	Sydney Inlet	17/03/85	1535	15					1	6	11	19	29	9	17	4	3				99	20.5	19.0	18
243 (24)	20	Sydney Inlet	18/03/85	0825	16					1	5	15	14	21	25	7	8	4				100	20.7	19.0	21
243 (24)	21	West Side of Sydney Inlet	20/03/85	0840	17			1	2	7	14	18	17	19	9	7	5		1	1		101	19.6	19.0	42

ACKNOWLEDGEMENTS

The author would like to thank the charter vessel masters and crews for their "above the call of duty" effort during the test fishery. In addition to obtaining samples and providing biomass estimates, the charter vessel masters were part of the management team and were directly involved in management decisions for the commercial fishery openings, and they did an admirable job.

Appreciation is expressed to the fishery officers, technicians and biologists who ensured that sampling guidelines were followed and the data recorded in a concise manner. Thanks are also extended to Jim Mitchell who monitored the charter payment catch and did an excellent job, to Alvin Sewid who helped organize the sampling equipment, and to Dennis Chalmers and Lloyd Webb who reviewed the text. A special thanks is extended to Matt Palmer for tabulating the data from the raw data sheets and to the staff of the SEP Information/Processing Center for typing the report. A special thanks is also extended to Alice Fedorenko for editing and preparing the report for publication.

Appendix Table 1. Onboard sampling instructions.

1. Selection of sample sites

   (a) A list of priority sites will be supplied to charter masters by the district Herring Management Coordinator.

   (b) While the onboard Fisheries Service representative is in charge of all charter operations, consultation with the vessel master is necessary to determine if it is possible to set in any given location at any given time.

2. Number of sample sets

   (a) For each important fishing location, secure 1 or 2 sample sets per visit. (e.g. from Mayne Bay secure one set in the evening and one in the morning, then travel to another location). Each such major location should be resampled at regular intervals.

To achieve a balanced number of samples from all areas, the following is a general guideline for the frequency of sample collection. The areas of the coast have been split into two groups as follows:

Major Areas		Minor Areas
2E	Chushewa/Juan Perez/Skincuttle	2W - sample each inlet as
3/4	Port Simpson/Big Bay	frequently as possible
5		4 - north end Porcher I.
6		8
7		9/10
14		12
15/16		13
17	north and south	18
23		
24		
25		
26		
27		

Where possible, obtain 3 or 4 samples per week from each major area and 1 or 2 samples per week from each minor area. It is important that sampling continue throughout the charter period, as fish are available, because age composition generally changes through the spawning season. It must be remembered that spawned out herring are just as important as unspawned herring in determining biological characteristics of different herring stocks.

   (b) If it is evident from echosounding that few fish are present in the major fishing location, immediately go on to the next site.

   (c) Try not to make large sets if the vessel master is confident a good cross section of available fish can be taken in a smaller set.

Appendix Table 1 (cont'd)

(d) Do not set twice on immature (young herring) stocks unless doubt exists that the first set was not representative of stocks in that location.

(e) Whether or not fish are caught, complete the Wheelhouse and Sample Log after each set; also, note the set in the Daily Log (Black Book).

3. Taking a random sample from the pursed seine

(a) Dry up the seine only as necessary to obtain samples; push the dip net or brailer vertically deep into the seine, then pull up quickly through a "BOIL" of fish so as to give no advantage to larger, faster fish. Some vessel masters may prefer to pump samples, eliminating much of the "drying up" process.

(b) Assure yourself of enough fish by taking at least 5 sample buckets from each set.

(c) After obtaining a representative sample, immediately release the remaining fish to minimize scale damage.

(d) Mix the herring in the 5 sample buckets by pouring the herring back and forth in the 5 buckets.

(e) After the herring are measured, fill one sample bucket with a random sample of herring, place one completed shipping/sample lable inside on top of the fish and affix the other to the bucket handle. If sampling is delayed, cover the fish with a tarp to prevent loss to birds.

For the 1985 roe herring season, two types of labels were used:

1. Black-printed label for the normal biological sample retained after every set.

2. Red-printed label for special samples ie. GSI, fecundity or abnormal herring encountered.

(f) Keep samples refrigerated on ice or in chilled seawater.

(g) Caution the vessel master to instruct the crew not to throw any fish overboard until Fisheries Service samples have been processed.

Appendix Table 1 (cont'd)

4. Processing onboard charter vessel samples

(a) Sample for roe yield using standard volumetric procedures as detailed in the instructions included with the ROE SAMPLE KIT.

(b) Measurement of fish in sample:

i) Subsample from the 5 sample buckets by measuring 20 herring from each bucket - do not pick out fish individually.

ii) The sampler should face away from the bucket containing fish and drop his hand into it. The first fish touched must be sampled, and each fish thereafter is selected by the same method until the sample is complete (100 fish). If a fish is not suitable for sampling (damaged), discard it and continue.

(c) Measure the fish

i) Tack the waterproof Wheelhouse and Sample Log to the measuring board.

ii) Record the "cut off" on the Wheelhouse and Sample Log and pencil in the appropriate "cut off" line on the measuring sheet; record the % below the cut off.

iii) Before measuring a fish, use a sharp knife to remove scales from the tail section. This is very important since the length measurement goes to the end of the silvery colour on the skin of the fish and not to the end of the scales which cover the silvery colour on the skin.

iv) Measure 100 fish, each from the tip of the lower jaw to the end of the silvery colour on the tail. Every fish length should be recorded by marking the interval it falls into.

(d) IMPORTANT - Please attempt to send the biological samples to Vancouver and Nanaimo before they decompose. Advise by B.C. telephone or radio telephone (to XL177) of when and how the samples are sent, i.e. commercial carrier destination and estimated time of arrival.

Appendix Table 2. The 1985 roe herring cutoff lengths used to separate age 3 herring from older fish.

Statistical Area	Cutoff length
NORTH COAST	
Area 2E	190 mm
2W	200 mm
5	180 mm
6 - 10	185 mm
STRAIT OF GEORGIA	
Areas 14 - 18	190 mm
WEST COAST VANCOUVER ISLAND	
23	190 mm
24	190 mm
25	190 mm
27	190 mm

NOTE: It should be noted that these cutoff lengths are used as reference points only in order to compare different test samples. They are derived from the average lengths of three-year-old fish from the previous year and may or may not reflect the average length this year. In addition, there can be a considerable overlap in size between fish of different ages, so there is no definite length that can be used to separate the two groups of fish. Generally, these cutoff lengths provide additional information on size distribution of the stocks.

An example of the usefulness of these cutoff lengths would be when comparing test sets made at the same location on different days. A large difference in the percentage of fish below the cutoff length may indicate that two different stocks of fish are present or that new fish have moved into the area. This is additional information used to determine the overall stock status.

Appendix Table 3. Instructions for estimating percent roe yield by volume.

This KIT contains:

- one clear plastic volumetric cylinder
- one 18 l (4 imp. gal.) bucket with lid
- instruction sheet with photographs at maturity stages

Determination of roe maturity:

1. Randomly obtain approximately 34 kg (75 lb) of herring from the set or load.
2. Fill the roe test bucket with fish to the top of the bucket.
   Note - The bucket should be filled to overflowing.
3. Determine sex of all fish in the bucket (by squeezing or stripping).
4. Record numbers of each sex on sampling sheet.
5. Strip all roe from females.
6. Record condition of all roe on sampling sheet.

   Condition 1 - acceptable by fishing companies for the Japanese market (bright yellow translucent eggs, few blood vessels) shown as MATURE 1 in photograph appended to the ROE SAMPLE KIT.

   Condition 2 - may be 2-3 days from acceptability (unclear and pinkish in colour, becoming translucent, too many blood vessels) shown as IMMATURE 2 in photograph appended to the ROE SAMPLE KIT.

   Condition 3 - may be 10 days from acceptability (very opaque with prominent blood vessels) shown as IMMATURE 3 in photograph appended to the ROE SAMPLE KIT.

7. Deposit all Mature 1 roe into volumetric cylinder. Record the percent recovery from the scale on the side of the cylinder. Also record the number of females in conditions 1, 2 and 3, and record the number of males.
8. Repeat the above procedure with a second sample and average the results. If the results of the two samples are very different, a third test may be required.

   Also, record the number of spawned out and juvenile/immature herring, and note gonad running.

Appendix Table 4. Instructions for estimating percent roe yield by weight.

1. Obtain a random sample of approximately 34 kg (75 lb) of herring from the set or load.

2. Hang the plastic container on the scale and tare the scale.

3. Fill the container with 10 kg (22 lb) of herring.

4. Strip all roe from the females.

5. Record condition of all the roe on the sampling sheet:

   Condition 1 - acceptable by fishing companies for the Japanese market (bright yellow translucent eggs, few blood vessels) shown as **MATURE** in photograph appended to ROE SAMPLE KIT.

   Condition 2 - may be 2-3 days from acceptability (unclear and pinkish in colour, becoming translucent, too many blood vessels) shown as **IMMATURE 2** in photograph appended to ROE SAMPLE KIT.

   Condition 3 - may be 10 days from acceptability (very opaque with prominent blood vessels) shown as **IMMATURE 3** in photograph appended to ROE SAMPLE KIT.

6. Tare the scale and deposit all Mature 1 roe into the weighing container; record the weight. If the #1 roe weight is 870 g, the roe yield is 8.7%; if 950 g, the roe yield is 9.5%, etc.

7. Record the number of females with conditions 1, 2 and 3 maturity and record the number of males.

8. Repeat the above procedure with a second sample and average the results. If the results of the two samples are very different, a third test may be required.

   Also, record the number of spawned out and juvenile/immature herring.

   Important: Check the scale for accuracy periodically using a known weight.

Appendix Table 5. Formula used to adjust roe yields assuming a 50:50 male/female sex ratio.

1. Determine the number of males and females in the roe test sample i.e. 42F, 56M.

2. Determine the % of females in the roe test sample i.e. 42.8% females.

3. Determine the % roe yield i.e. 9%.

   To convert the roe yield to a 50:50 male/female ratio, use the following formula:

$$\frac{\% \text{ roe} \times 50}{\% \text{ females}} \quad \text{i.e.} \quad \frac{9 \times 50}{42.8} = 10.51\%$$

In this example, the roe yield was actually 10.5% assuming a 50:50 male/female sex ratio for the herring stocks in the area.

This information is not to be passed to the Management Coordinator over the R.T. Make reference to the fact the sample is heavy on males or females, but do not adjust the roe yield.

This formula is for your own use only (for interest only).

Appendix Fig. 1a. New Wheelhouse and Sample Log - roe yield by volume.

July, 1984

NEW WHEEL HOUSE & SAMPLE LOG

(To be completed after every set, including water hauls and charter payment sets)

SET INFORMATION

1. Vessel Kaiwarra II 2. Captain Don Smith
3. Stat. Area 24W 4. a) Location N. of Pt Ingus Isle
   b) Water Depth 11 fms
5. Date: Day 4 Month 3 Year 85
6. Set No 5 7. Sample No 4 8. Time Set 1748
9. Sample: a) is ✓ b) is not _____ representative
10. Est. Tons in school set on 75 11. In catch 75
12. Est. Tons in Location 1400 13. Est. Tons in Stat Area No Est.
14. a) Wind Direction & Velocity 0 b) sky 0 %clear
    c) other _____ d) Sea Surface Temperature 6.7°C
15. Herring School Behaviour Fast moving school

16. Incidence of other species Nil

17. Summary of On Board Size Measurements:
    a) Cutoff length used 185
    b) Measured 100
    c) Fish less than cutoff length 0 %
    d) Average Size 24.9cms

Comments RE: HERRING SIZE

Large herring

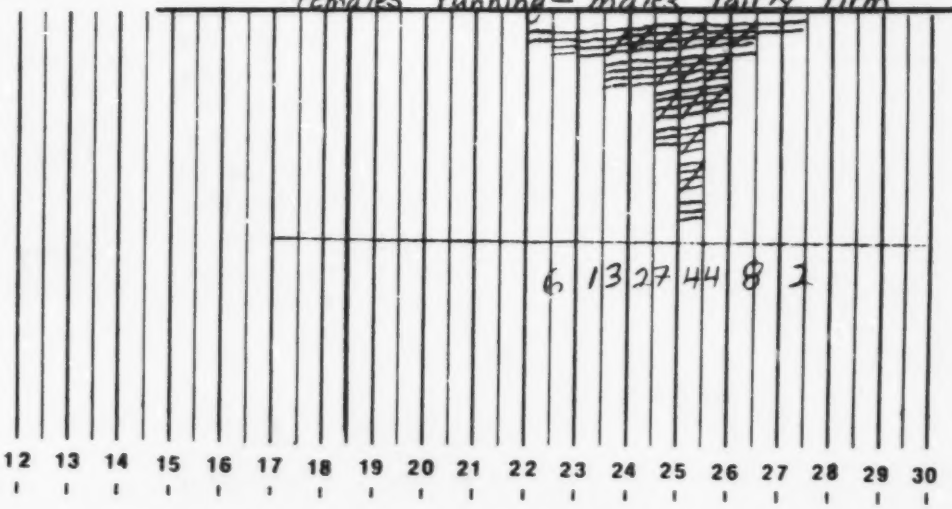
ROE TEST INFORMATION

	Test 1	Test 2	Test 3	Test 4	Test 5
No. Females cond. 1 Roe a)	19	28	26	25	26
No. Females cond. 2 Roe b)	4	2	4	2	3
No. Females cond. 3 Roe c)	4	5	3	4	7
TOTAL FEMALES .....d)	27	35	33	31	36
NO. OF MALES .....e)	29	21	26	24	19
Spawned out .....f)					
Juvenile/Immature .....g)					
ROE YIELD (VOL) .....h)	9 %	13 %	13 %	12 %	12 %
Roe Yield (WT) .....i)	%	%	%	%	%
Total Sample Weight.....j)	gm	gm	gm	gm	gm
Total Roe Weight.....k)	gm	gm	gm	gm	gm

AVERAGE ROE YIELD 11.8

20. Comments RE: Maturity (gonad running or firm) spawning, bird and Sea Lion activity. etc.

females running – males fairly firm



IMPORTANT

Complete This Section

Reporting Officer

Joe Blow

Date Reported: DAY/MONTH/YEAR

4/3/85

Time: 2000

Reported to:

R. Smith

DURATRAK WATERPROOF

Appendix Fig. 1b. New Wheelhouse and Sample Log - roe yield by weight.

July, 1984

NEW WHEEL HOUSE & SAMPLE LOG

(To be completed after every set, including water hauls and charter payment sets)

SET INFORMATION

1. Vessel Argent Fisher 2. Captain Sup Malatestinic
3. Stat. Area 111 4. a) Location (Shingle Spit) Lambert Chan.
b) Water Depth 28 fms
5. Date: Day 25 Month 02 Year 85
6. Set No 3 7. Sample No 3 8. Time Set 1145
9. Sample: a) is ✓ b) is not _____ representative
10. Est. Tons in school set on 150 11. In catch 100
12. Est. Tons in Location 500 13. Est. Tons in Stat Area 3000
14. a) Wind Direction & Velocity calm b) sky 50 % clear
c) other _____ d) Sea Surface Temperature 8.2°C
15. Herring School Behaviour fast moving streak type school
16. Incidence of other species Nil
17. Summary of On Board Size Measurements:
a) Cutoff length used 190
b) Measured 101
c) Fish less than cutoff length 5 %
d) Average Size 21.45

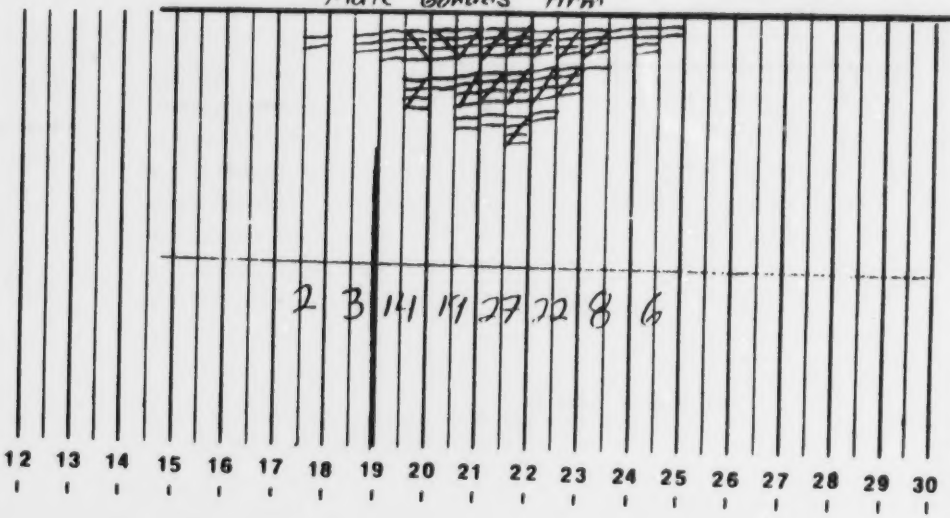
Comments RE: HERRING SIZE
Herring are larger than normal

ROE TEST INFORMATION

	Test 1	Test 2	Test 3	Test 4	Test 5
No. Females cond. 1 Roe a)	26	30	22	26	
No. Females cond. 2 Roe b)	6	3	4	3	
No. Females cond. 3 Roe c)	4	2	6	5	
TOTAL FEMALES .....d)	36	35	32	34	
NO. OF MALES .....e)	47	49	44	43	
Spawned out .....f)					
Juvenile/Immature .....g)					
ROE YIELD (VOL) .....h)	%	%	%	%	%
Roe Yield (WT) .....i)	7.56 %	7.71 %	7.20 %	7.70 %	%
Total Sample Weight.....j)	10000 gm	10000 gm	10000 gm	10000 gm	gm
Total Roe Weight.....k)	756 gm	771 gm	720 gm	770 gm	gm

AVERAGE ROE YIELD: 7.54

20. Comments RE: Maturity (gonad running or firm) spawning, bird and Sea Lion activity. etc.
Male Gonads firm



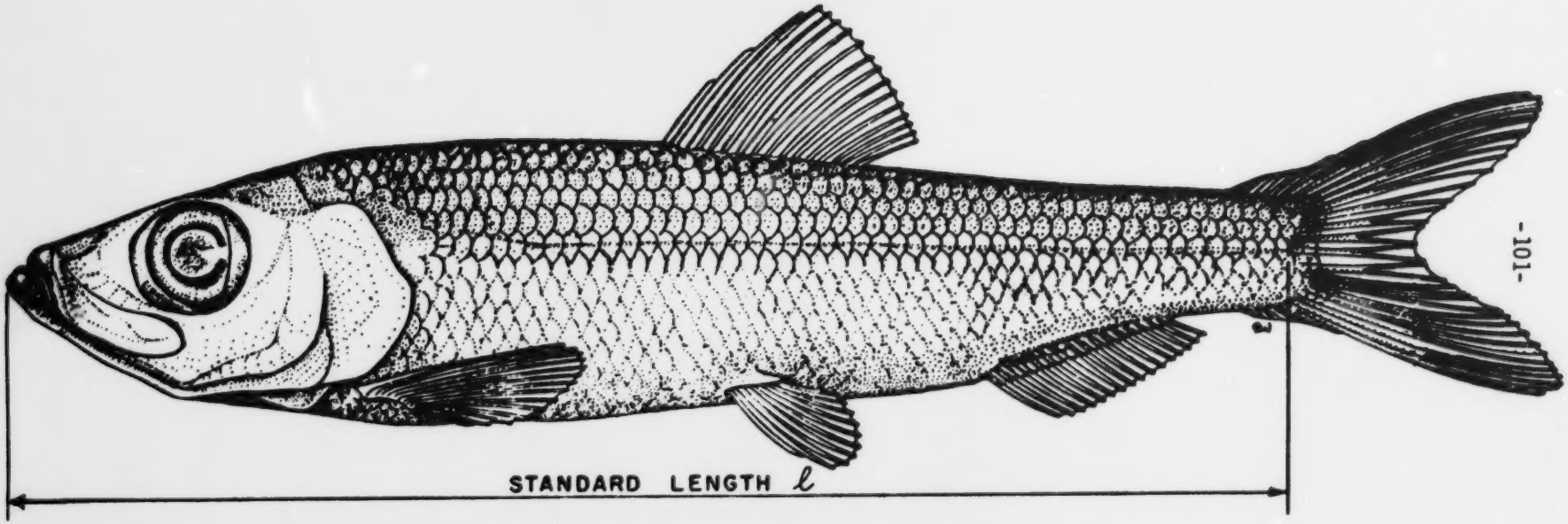
IMPORTANT
Complete This Section

Reporting Officer: Joe Smith

Date Reported: DAY/MONTH/YEAR: 28/02/85

Time: 1415

Reported to: R. Blow



Appendix Fig. 2. The standard length measurement ℓ used for measuring herring. This length is defined as the distance from the anterior tip of the fish with the mouth closed, to the end of the silver skin on the caudal peduncle. It is important to scrape the scales off the peduncle area to find the end of the silvery portion of the skin.